

User Manual

[EN-Series LCD Video Wall]



Models

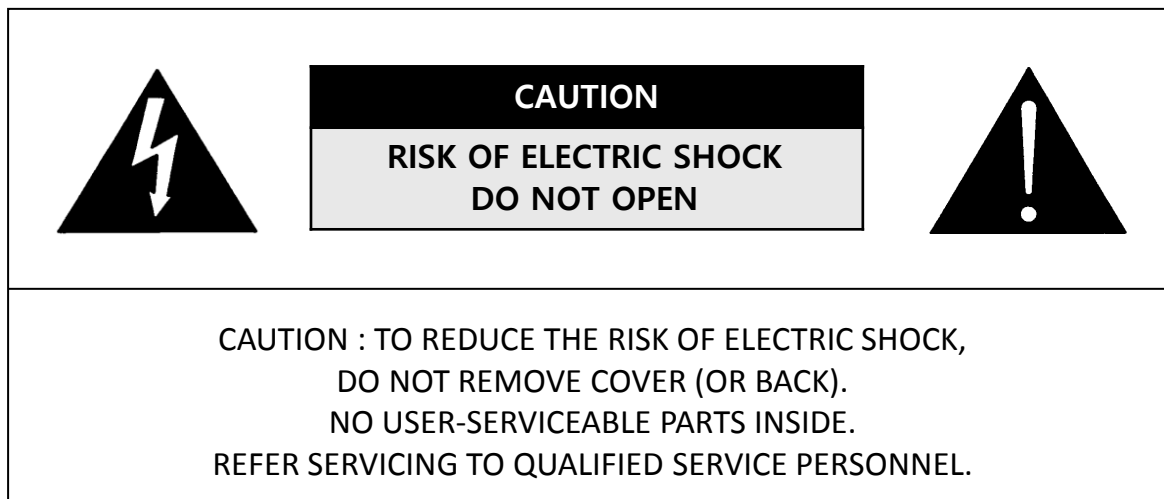
EN46MSS
EN46MSU
EN46HSS
EN46HSU
EN55MSS
EN55MSU
EN55HSS
EN55HSU
EN55HLS
EN55MLU

◆ Table of Contents

1. Instructions
2. Safety precautions for “EN”-series systems
3. Mechanical Layout
4. Connections
5. SICP
6. Remote Control
7. Viewing the Menus
8. ACR Agent Network
9. ACR Monitor
10. Specifications

Notice

1. When disconnecting the display from an electrical outlet, the plug must be pulled out from the socket. Do not remove power cord from outlet by pulling from the cord. Pull from the plug head.
2. **WARNING** – To reduce the risk of fire or electric shock, do not expose this appliance to rain or other forms of moisture.
3. Display must not be exposed to liquids via dripping or splashing. Please do not place liquid –filled items such as vases near the display.
4. Use only a properly grounded plug and receptacle.
5. **CAUTION** – These instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any service other than that contained in the operating instructions unless you are qualified to do so.



This symbol is intended to alert the user to the presence of insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with dry microfiber cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other display (including amplifiers) that produce heat.
9. Do not remove ground prong from three-pronged plugs. If your outlet will not accept three-pronged plugs, consult an electrician for replacement.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the display.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the display. When a cart is used, exercise caution when moving the cart/display combination to avoid injury from tip-over.
13. Unplug this display during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the display has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the display, the display has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Do not expose this display to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the display.
16. To completely disconnect this display from the wall outlet, disconnect the power supply cord plug from the AC receptacle./wall socket
17. The mains plug of the power supply cord shall remain readily operable.
18. An display with CLASS I construction shall be connected to a wall socket outlet with a protective grounding connection.
19. Note: Prolonged use of headphones at a high volume may cause damage your ears.
20. **Notice to users : This is a Class A digital device**
21. This device is designed for commercial use and features safety certificates for electromagnetic interference (EMI). Users should be mindful of EMI issues.

◆ Instructions

Thank You for Purchasing our Product

This manual describes how to use the product and provides safety guidelines and best practices. Please read the manual carefully before using it.

After reading this manual, please retain for future reference.

If you have any questions or a problem occurs, please contact either the company you purchased this product from or an authorized service center.

- ✓ **Displaying static images for an extended period of time may cause a burn-in effect.**
- ✓ **Burn-in effect and the faults in brightness and picture elements caused by extended display of static images are not subject to warranty coverage.**

Multivision Features

- ✓ Wide flat screen with unparalleled display quality and dependability
- ✓ Easy to install and move due to its thin design.
- ✓ True commercial-grade reliability

Accessories



CD



Remote



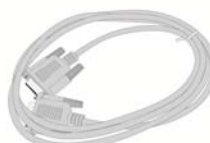
Batteries (AAA x 2)



DVI Cable



VGA Cable



RS232C Cable



Power Cable

◆ Cautions For Consisting Series System

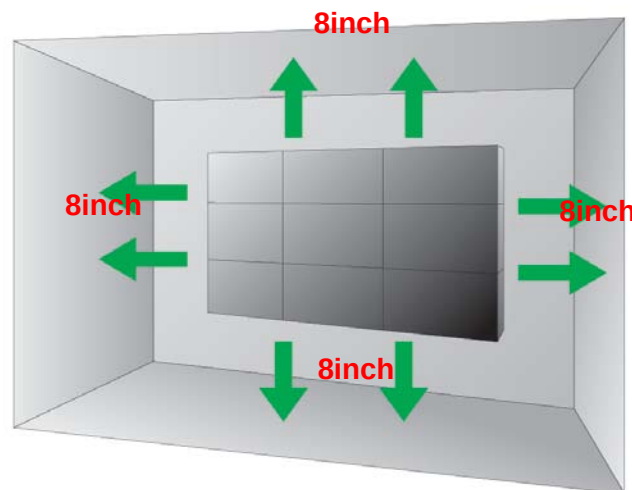
Environmental conditions for installation

- ✓ Since the panel is very sensitive to physical impact, installation requires considerable caution.
- ✓ Minimum clearance (4 inches) on top/bottom/right/left of video wall array must be secured for proper ventilation. Installation must avoid airtight or nearly airtight places. Improper ventilation causes malfunction and shortens product lifetime via rapid internal temperature increase. If EN-series displays must be installed in a poorly ventilated area, openings or fans must be provided to keep the internal temperature between 32~95 °F.
- ✓ Please make sure to grounded (Earthing) AC power plugs and sockets.
- ✓ Considering EN-Series Max power consumption, check the main electric specification.

Clearance for Ventilation

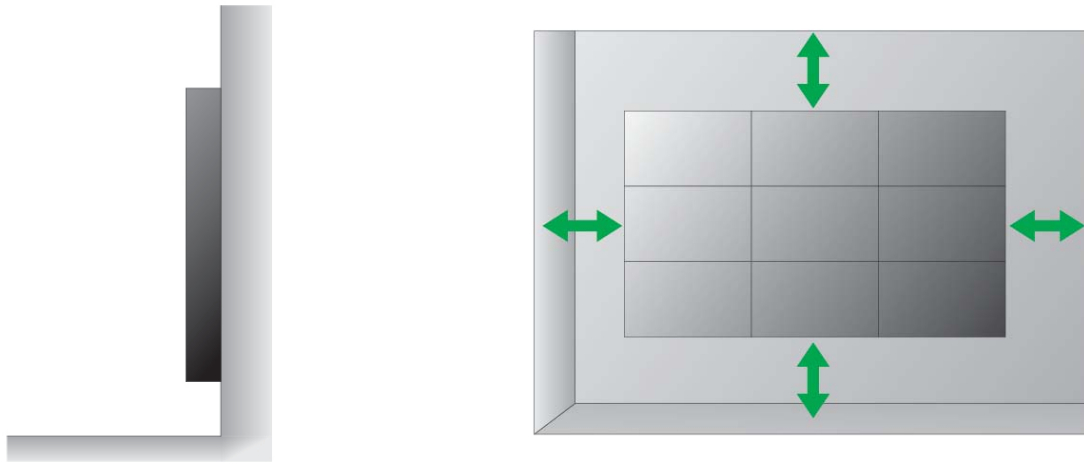
When you install EN-Series, make sure there is at least **8inches** clearance on all sides (top/bottom/left/right) for effective ventilation and do not seal off the perimeter of EN-Series video wall arrays.

If EN-series sets are installed at the locations with poor ventilation, the internal temperature can be rise rapidly, causing frequent malfunctions and rapid reduction of the product life.



Wall-Embedded EN-Series Displays

In case of clearance <8 inches on each side of the display wall, make sure cooling fans are in place at the upper part of the array to maintain internal temperature within the recommended threshold.



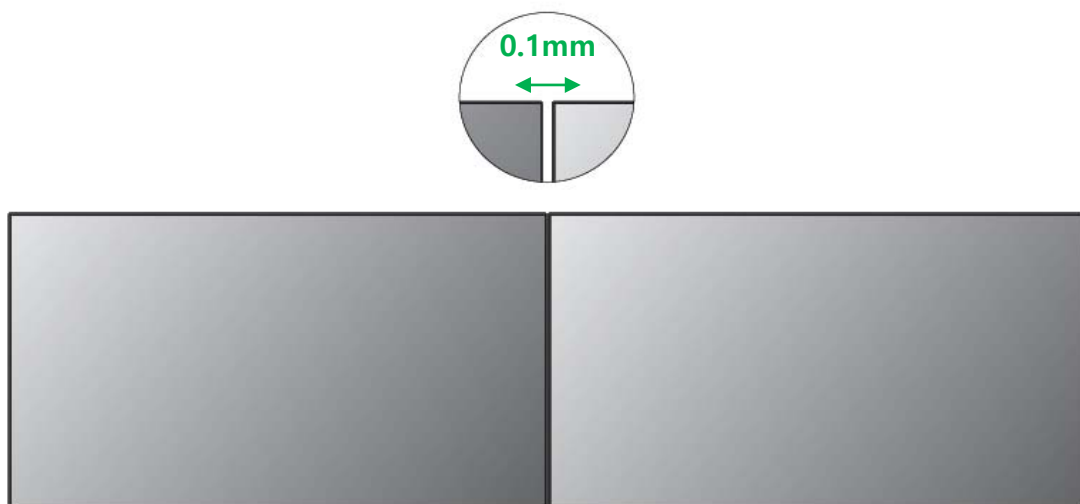
Mounting on a wall surface

Please secure minimum clearance as shown in the picture for adequate ventilation and technical service.

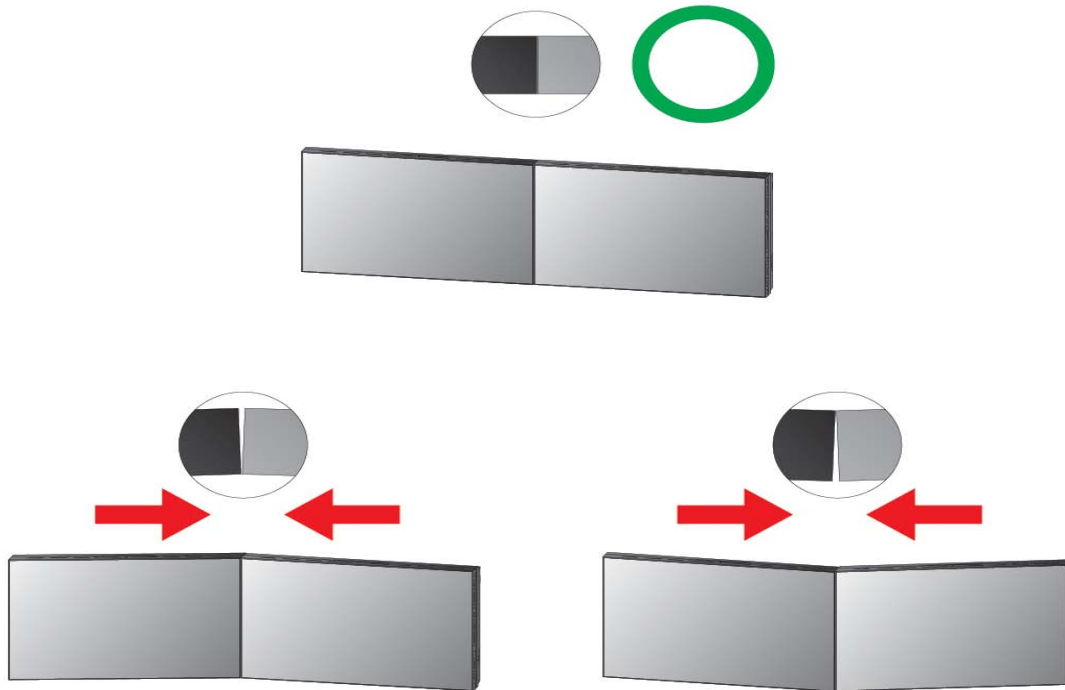
Ventilation space in front of EN-Series displays must be furnished for heat dispersion. If the area in front of EN-Series displays must be sealed, there must be consideration for the heat dispersion on the rear side of EN-Series to compensate.

Precautions for installation

During installation, do not apply pressure to any surface of the panel. Damage to the panel may result from external pressure or even minor impact to the panel. Physical and cosmetic damage to displays is not covered under warranty.



Please ensure alignment on the z-axis for a level plane across adjacent panels (as shown in the diagram below). If precautions are not heeded, GPO US will not accept responsibility for any Failure due to such installation errors.



- ❖ **Do not apply excessive external pressure to panels during installation.**
- ❖ **There is no warranty coverage for any damage arising from external pressure/impact.**

Do not cover fan ventilation holes

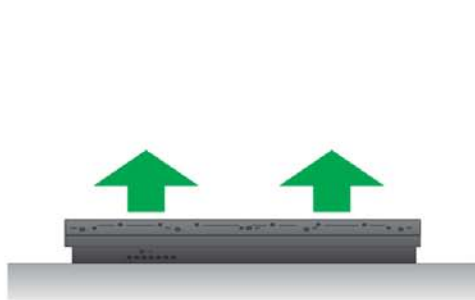
Carefully install EN-Series not to cover the fan air holes with any structural object.

If the holes are covered with anything, the inner temperature can be raised rapidly and it can cause malfunctions

Please retain the following instructions for panel protection

This product can be damaged even with minor impact.

Please keep following instructions for future reference when carrying or storing the products.



- If you need to stand LCD up, you must use handles on the rear and pull/raise upward slowly so that the LCD panel does not touch the ground or floor.



- If you need to lay the LCD in a face-down position, please use shock-absorbing pads under the LCD panel surface.
- If you need to lay down LCD in a panel face-up position, please be cautious and avoid falling objects on the surface of the LCD.

Handle with Caution

Shock/Impact on the set's sides will result in internal circuit damages.

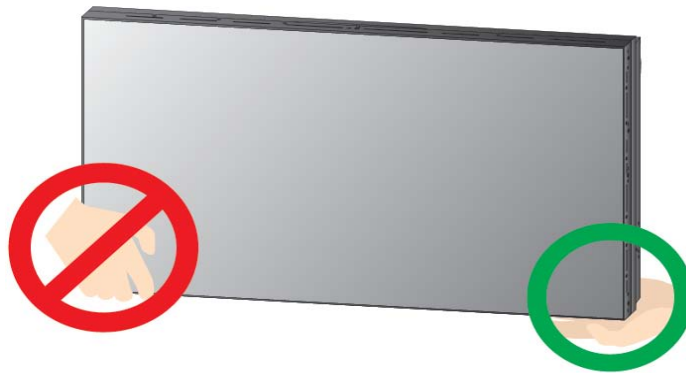
The edges of the panel are fragile. Use shock-absorbing pads or rugs when laying the product down.



- Please do not allow the LCD to stand alone. It may fall or slip be broken or damaged. Keep hands on the LCD when it is in this position.
- Do not lean the LCD on a bezel edge. This may result in damage to the bottom bezel of the LCD.
- Do not lean the LCD toward a bezel corner. This may lead to panel damage.

How to carry the product

- ✓ At least two people are required to carry the display. When carrying the product upright, please hold the handles on the rear as well as the bottom of the display simultaneously for stability.



- ✓ When carrying the product with the panel positioned upwards as shown below, please hold as shown in the diagram.

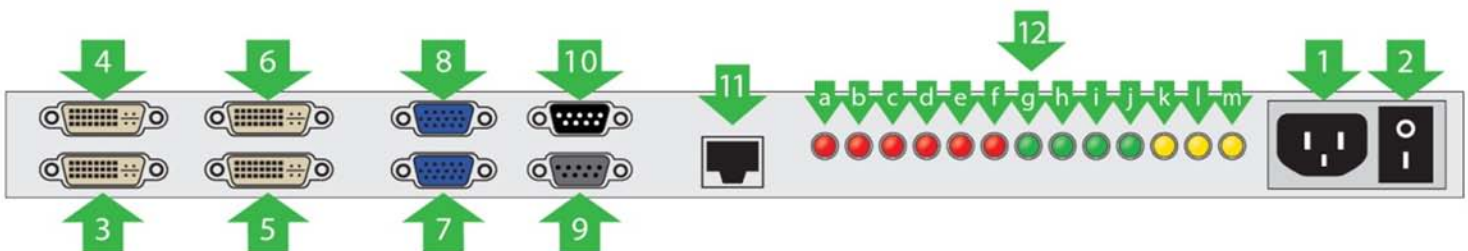
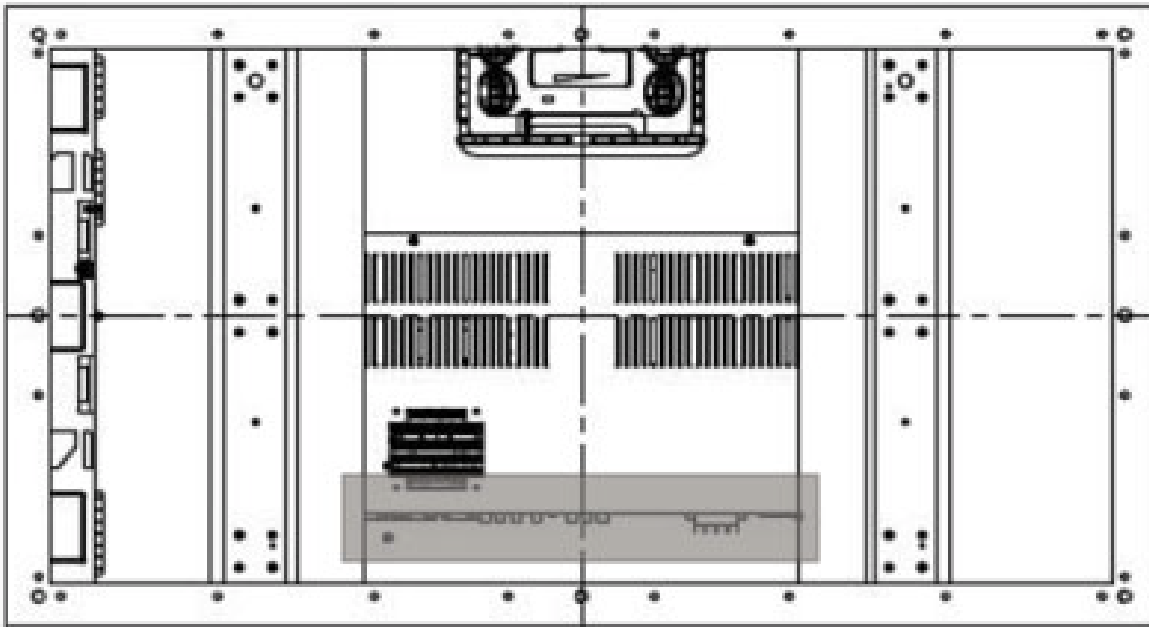


Application information

If static images are displayed on the screen for extended periods of time, image retention (burn-in) can result.

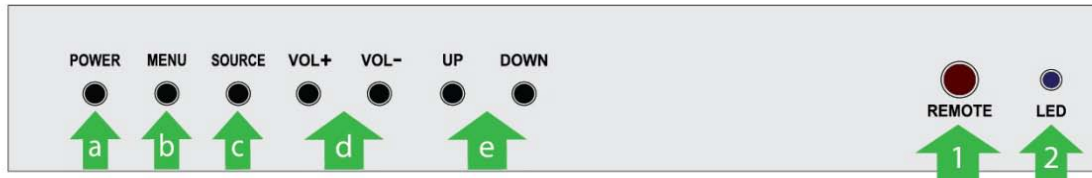
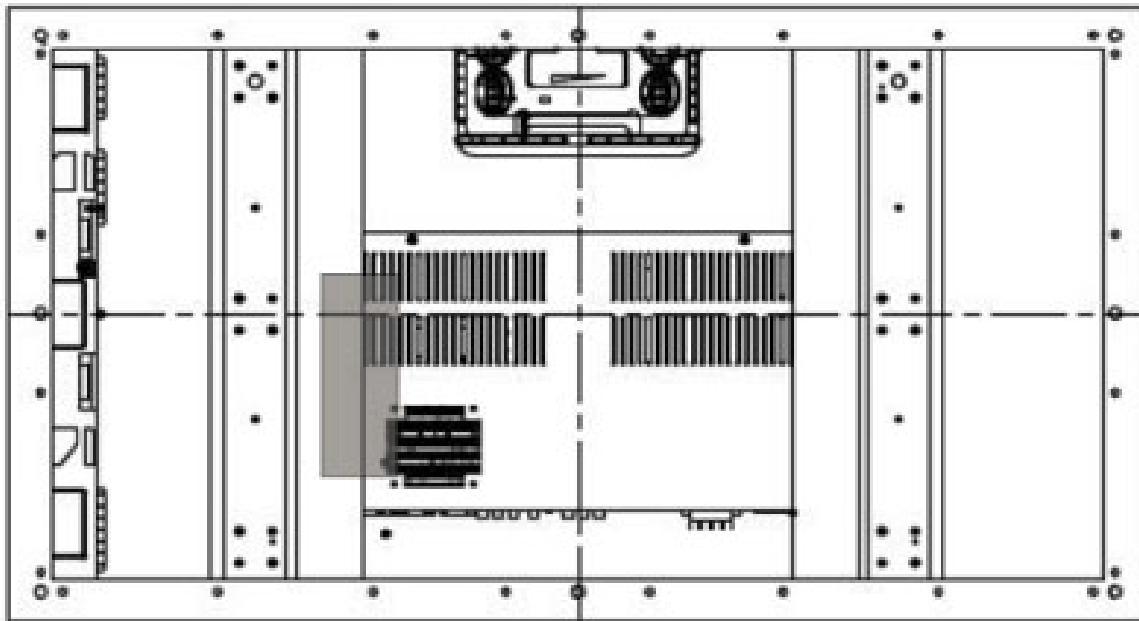
Please retain the following instructions to optimize the lifetime and functions of the product.

◆ Mechanical Layout



1. AC Power S/W On/Off
2. AC Power In (100V ~ 240V)
3. DVI 1 Input
4. DVI 1 Output
5. DVI 2 Input
6. DVI 2 Output
7. VGA Input
8. VGA Output
9. RS-232 Output
10. RS-232 Input
11. LAN Input

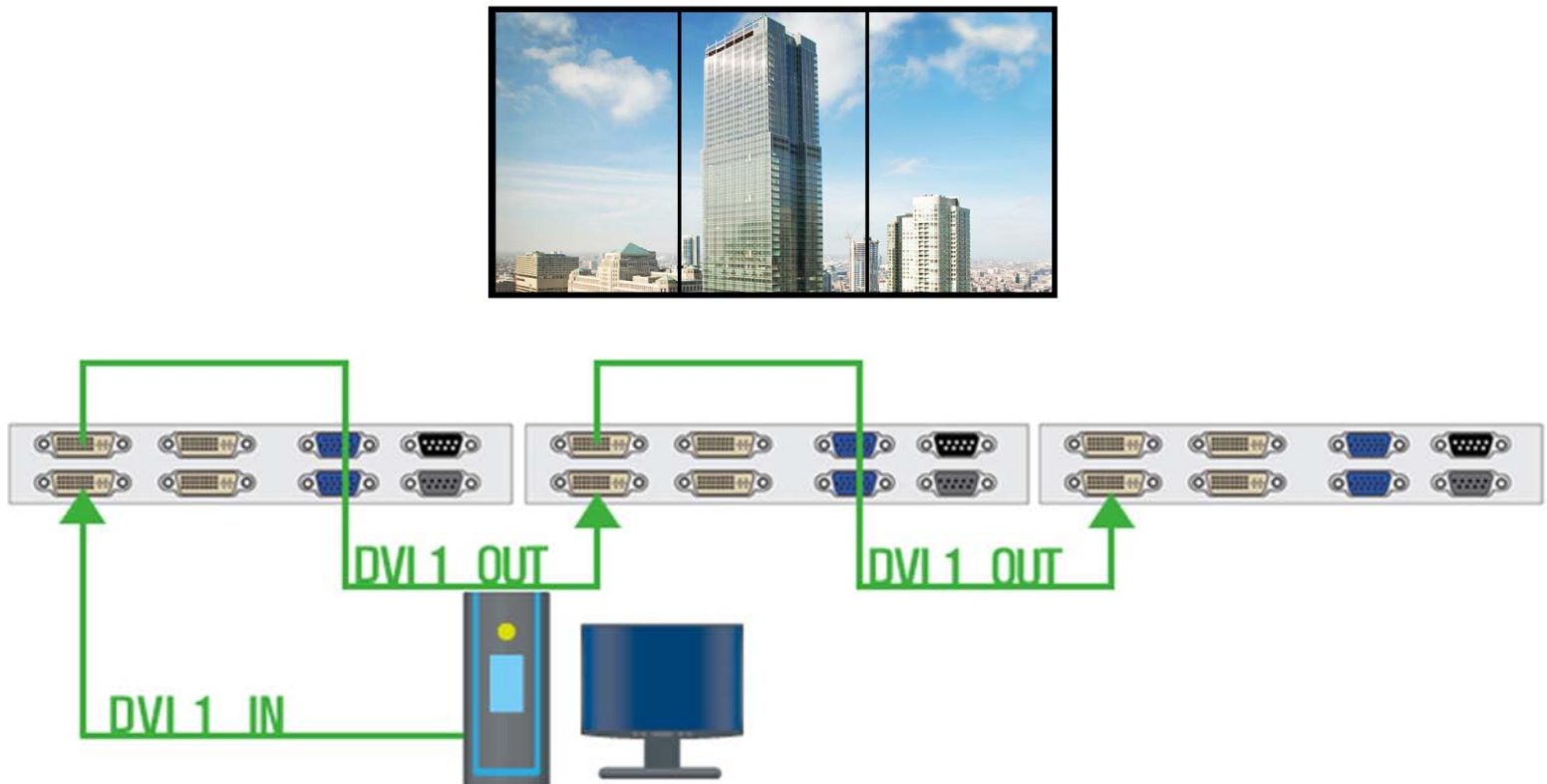
- a. LED(RED) : LAN Connection Display
- b. LED(RED) : Back light On(Lux) Display.
- c. LED(RED) : Over Temperature Display.
- d. LED(RED) : Active Power On Display.
- e. LED(RED) : Active Back light On Display.
- f. LED(RED) : Active Back light Dimming On Display.
- g. LED(GREEN) : Active DC24V Input Display.
- h. LED(GREEN) : Active DC12V Input Display
- i. LED(GREEN) : Active DCM5V Input Display
- j. LED(GREEN) : Active DCS5V Input Display
- k. LED(YELLOW) : Source Input 1 Display.
- l. LED(YELLOW) : Source Input 2 Display
- m. LED(YELLOW) : Source Input 3 Display



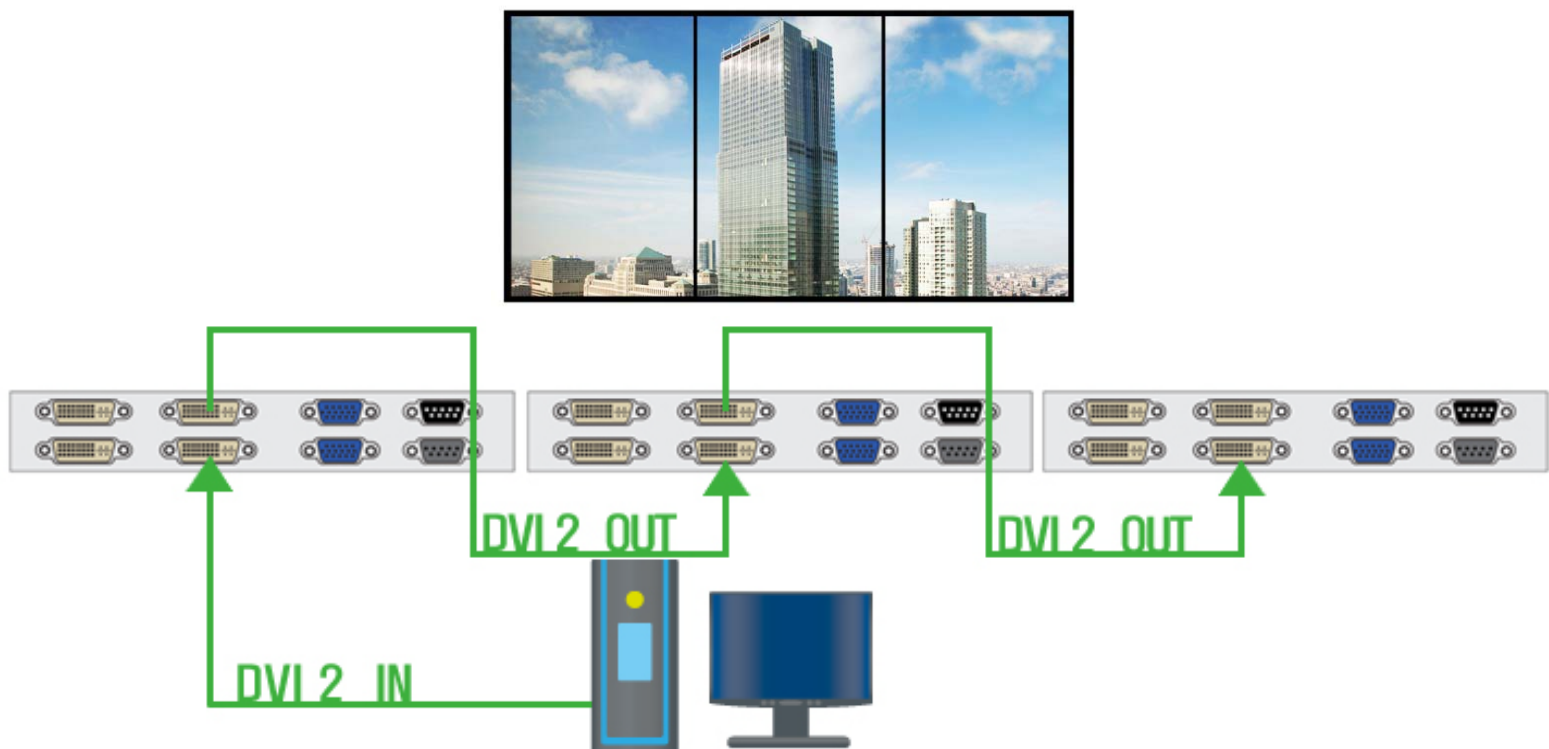
1. IR
 - Aim the remote control towards this spot on the LCD Display.
2. LED Indicator
 - LCD Power Status display(On : BLUE / Off : RED)
3. OSD KEY Input(Power / Menu / Source / Left / Right / Up / Down)
 - a) Power : Turns the LCD Display On/ Off.
 - b) Menu : Displays the main On-Screen menu.
 - c) Source : Select Input Source
 - d) Left/Right : Moves from one menu item to another horizontally or adjusts selected menu values. Adjusts the audio volume.
 - e) Up/Down : Moves from one menu item to another vertically or adjusts selected menu values.

◆ Connections

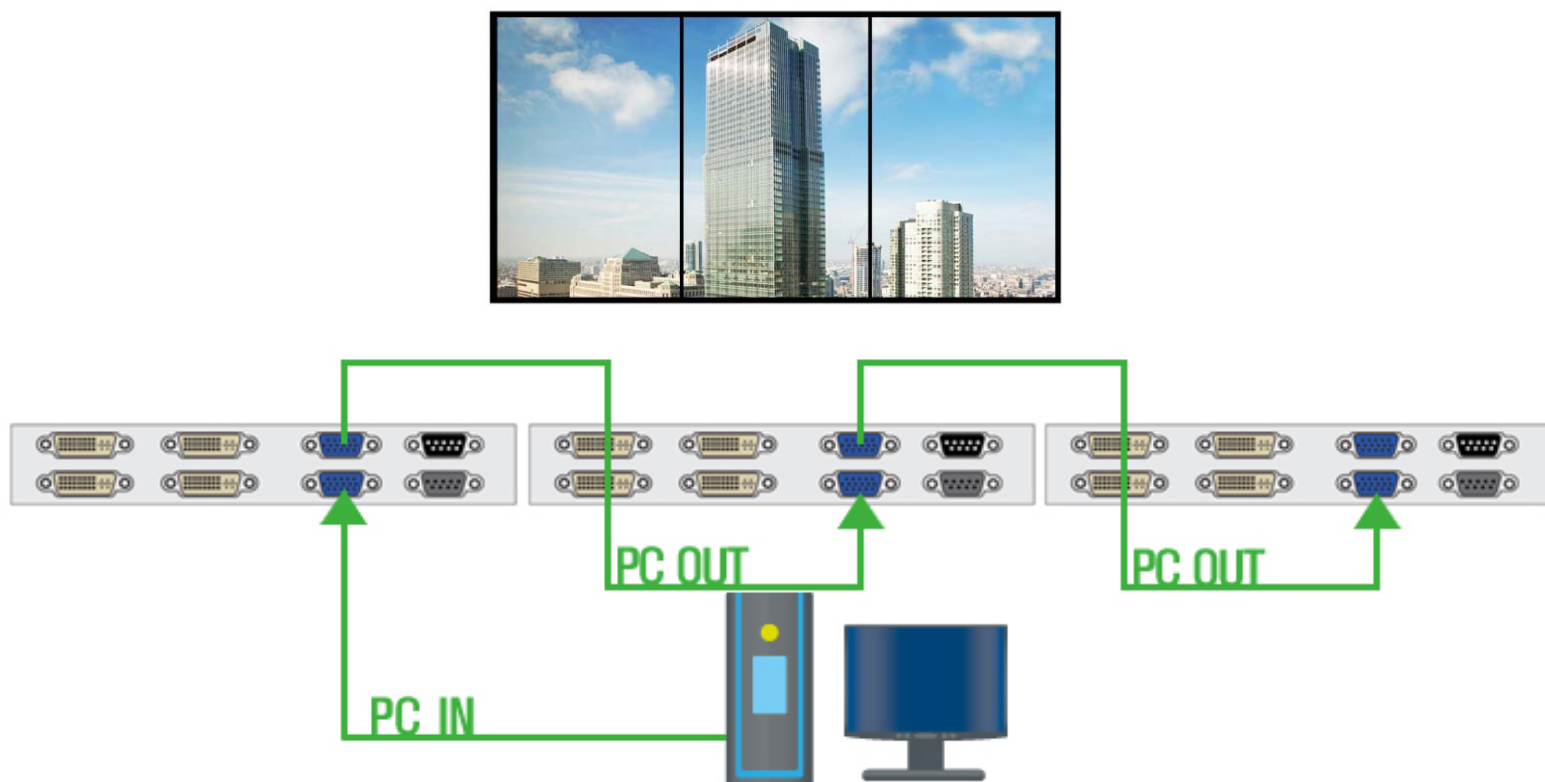
Cabling(DVI 1)



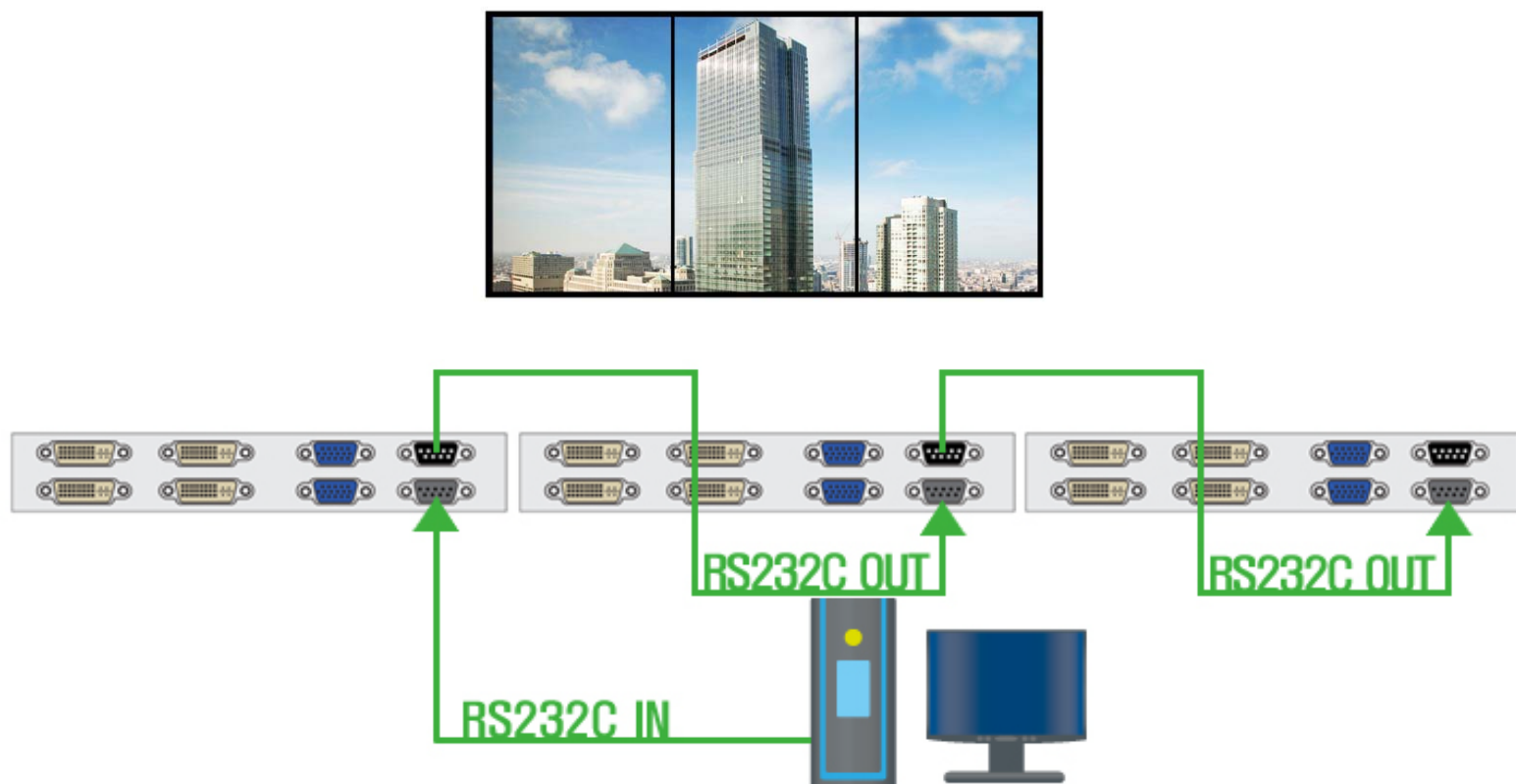
Cabling (DVI 2)



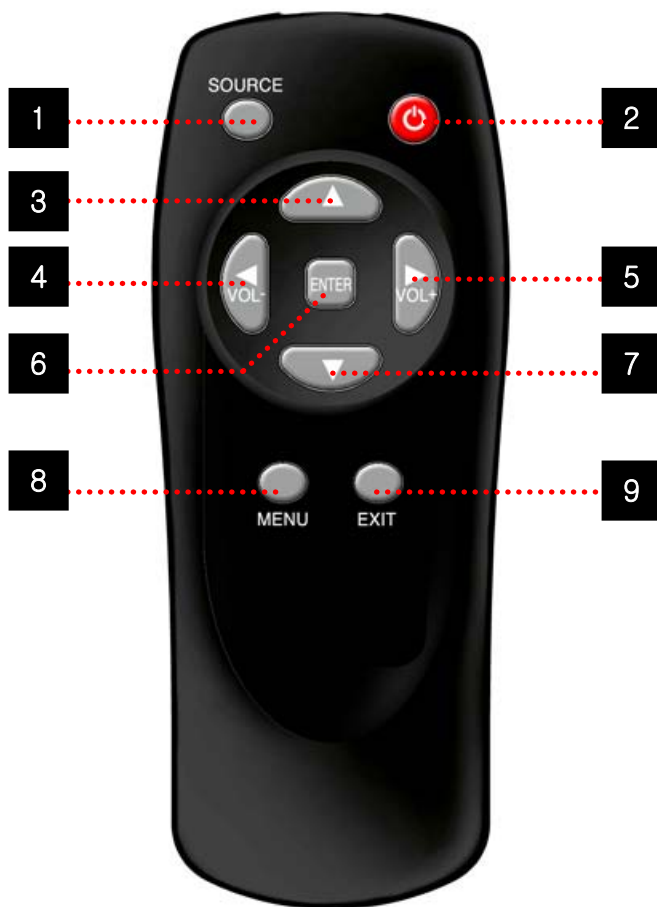
Cabling (VGA)



Cabling (RS-232)

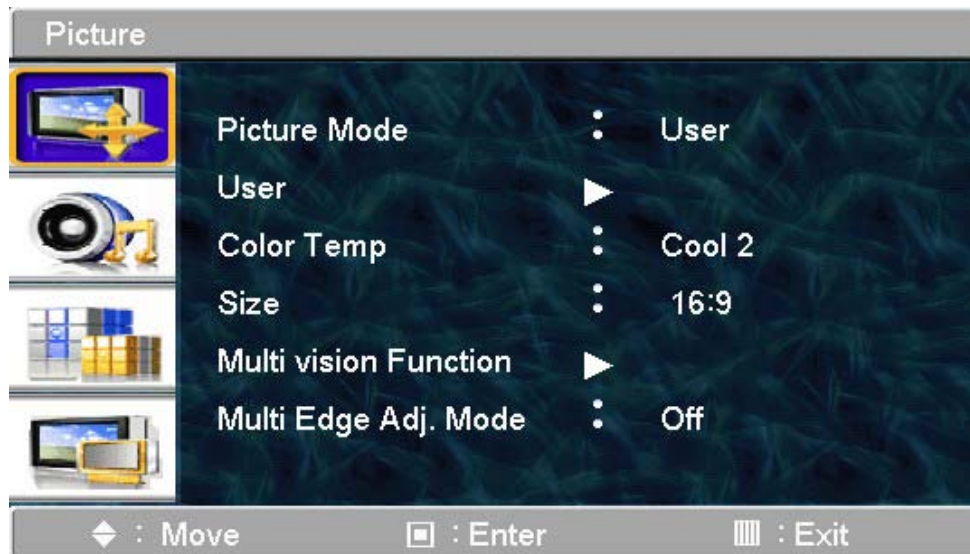


◆ Remote Control



1. SOURCE : Select Input Source
-DVI 1-> DVI 2-> PC
2. POWER : Turns the LCD Display On and Off
3. UP : Control the UP cursor in the menu
4. LEFT : Control the LEFT cursor in the menu
5. RIGHT : Control the RIGHT cursor in the menu
6. ENTER : Control the ENTER cursor in the menu
7. DOWN : Control the DOWN cursor in the menu
8. MENU : Displays the main On-Screen menu
9. EXIT : Exit the On-Screen menu

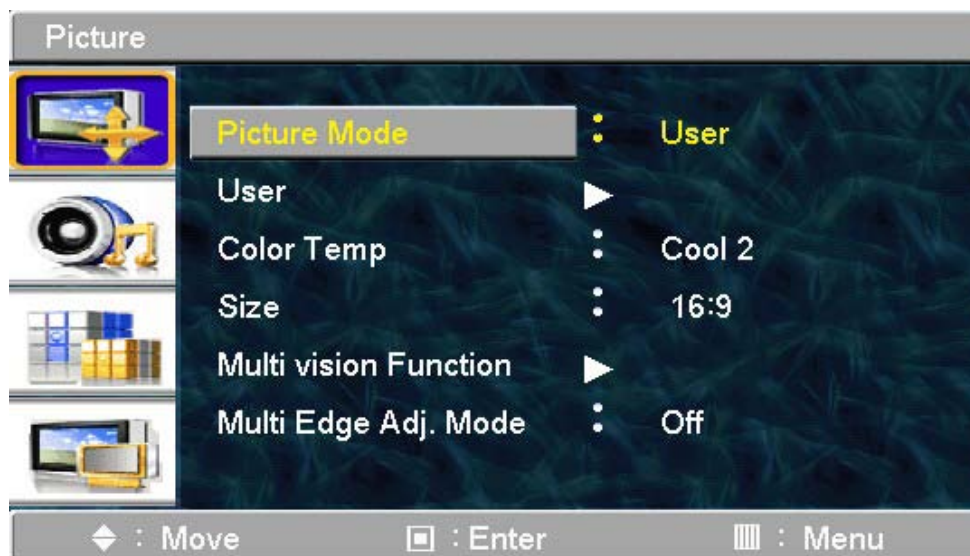
◆ Viewing the Menus



Press the MENU button.

The OSD menu is then displayed on the screen. Left side has five icons: **Picture**, **Sound**, **Setup** and **PIP**.

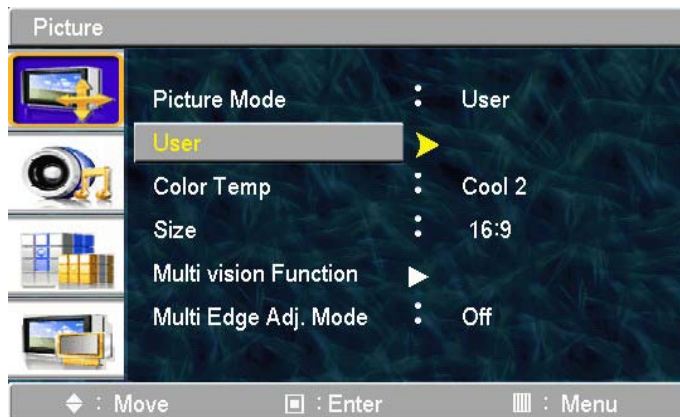
Changing the Picture Standard



1. Press the **MENU** button to display the menu.
2. Press the ▲ or ▼ button to select **Picture**, then press the **ENTER** button.
3. Press the **ENTER** button twice.
4. Select the required mode by pressing the ▲ or ▼ button, then press the **ENTER** button.
 - The settings values may vary depending on the input source. [Ex: DVI, VGA(PC)]
5. Press the **EXIT** button to exit.

Customizing the Picture Settings

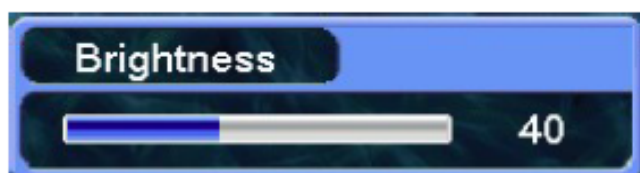
Displays feature several setting options that allow you to control the picture quality.



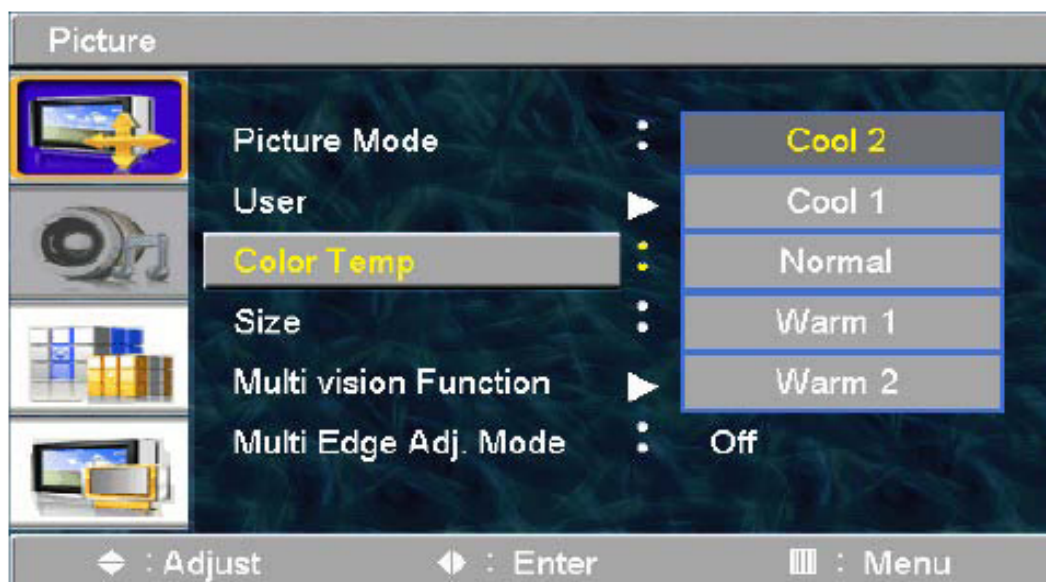
1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Custom**, then press the **ENTER** button.
4. Select the required mode by pressing the **▲** or **▼** button, then press the **ENTER** button.
5. Select the required option by pressing the **▲** or **▼** button, then press the **ENTER** button.
6. When you are satisfied with your setting, press the **ENTER** button.
7. Press the **EXIT** button to exit.

-Brightness – Contrast– Color – Tint –Sharpness (Tint NTSC only)

Press the **◀** or **▶** button until the desired setting is reached



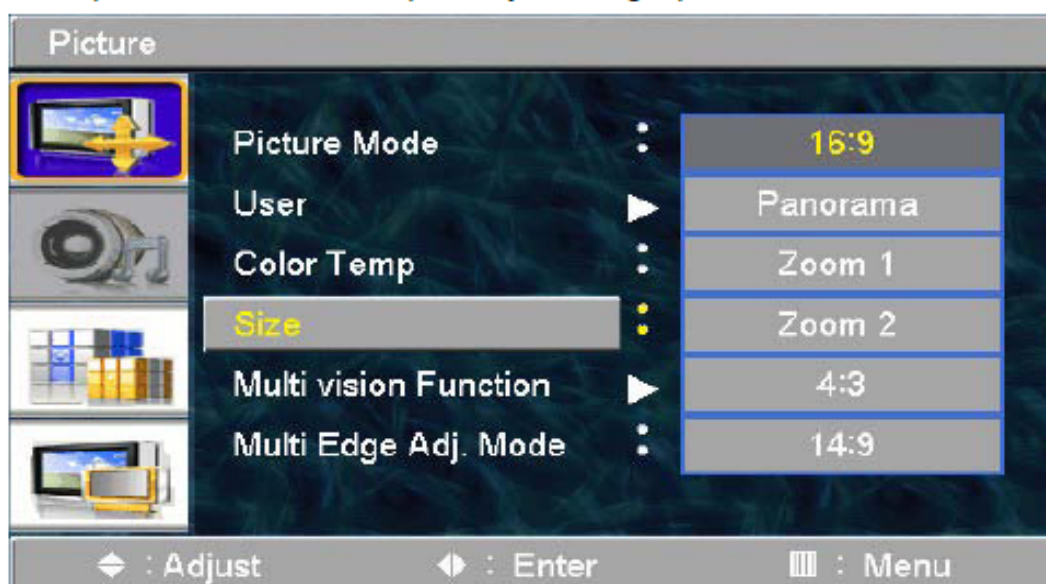
- ◆ Brightness: It adjusts the brightness of the image.
- ◆ Contrast: It adjusts the contrast of image.
- ◆ Color: It adjusts the intensity of the color.
- ◆ Tint: It adjusts the natural tint of the image.
- ◆ Sharpness: It adjusts the clarity of the image.
- ◆ Color Tone: Cool2/Cool1/Normal/Warm1/Warm2



- ◆ Cool 1: This results in a blue tone.
- ◆ Cool 2: This results in a more blue tone.
- ◆ Normal: This is standard color setting.
- ◆ Warm1: This results in a reddish tone.
- ◆ Warm2: This results in a more reddish tone.

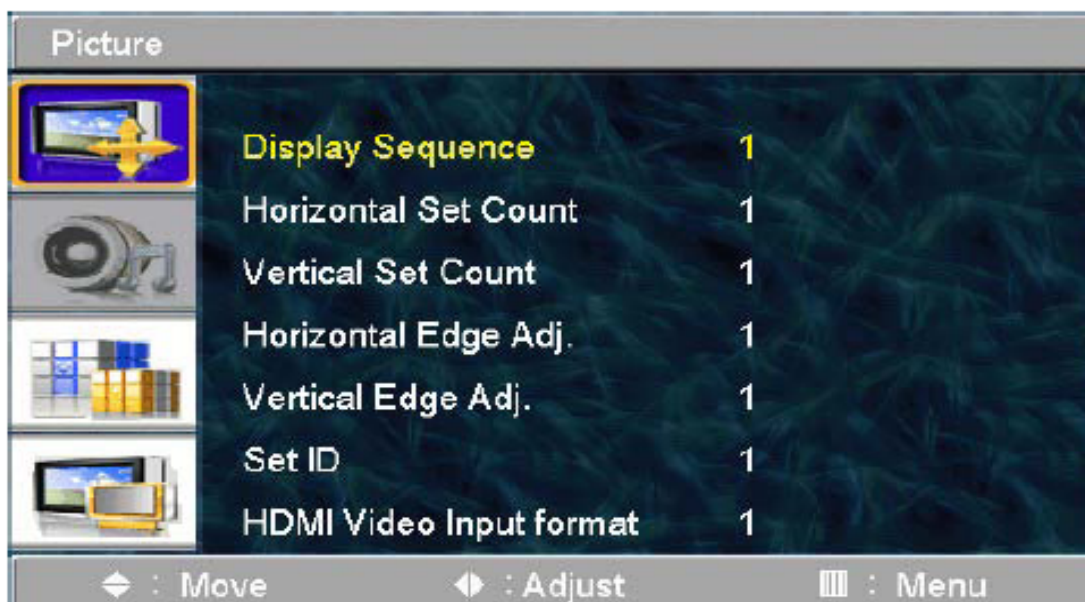
Selecting the Picture Size.

You can select the picture size which best corresponds to your viewing requirements.



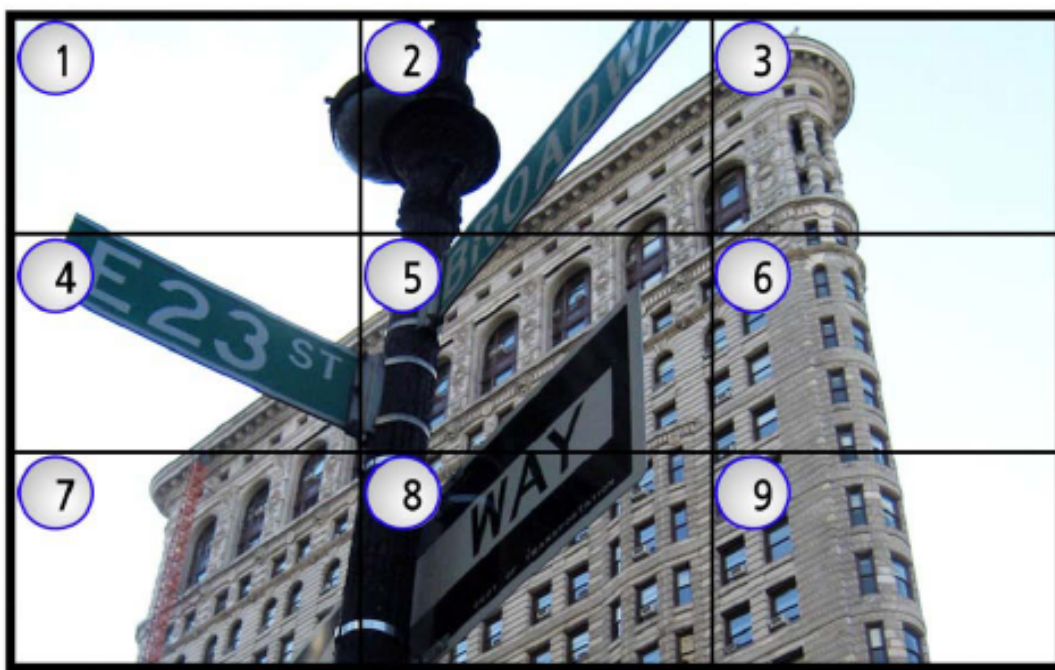
1. Press the MENU button to display the menu.
2. Press the ENTER button.
3. Press the ▲ or ▼ button to select Size, then press the ENTER button.
4. Select the required option by pressing the ▲ or ▼ button, then press the ENTER button.
5. Press the EXIT button to exit.

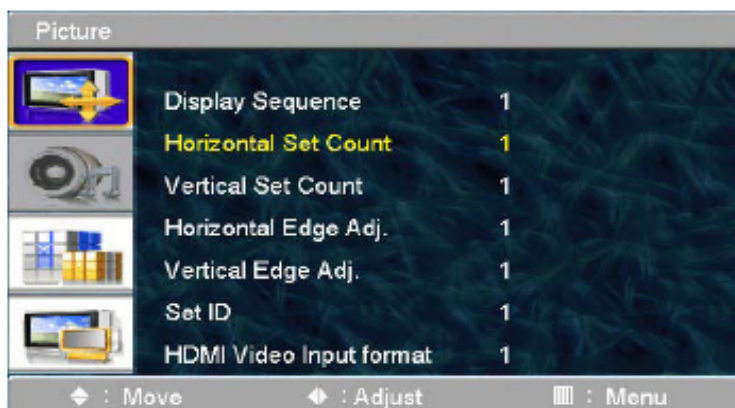
Multi Vision Function.



1. Press the MENU button to display the menu.
2. Press the ENTER button.
3. Press the ▲ or ▼ button to select Multi vision Function, then press the ENTER button.
4. Press the ▲ or ▼ button to select Display Sequence, then press the ENTER button.
5. Press the ◀ or ▶ button until you reach the optimal setting.
6. Press the EXIT button to exit.

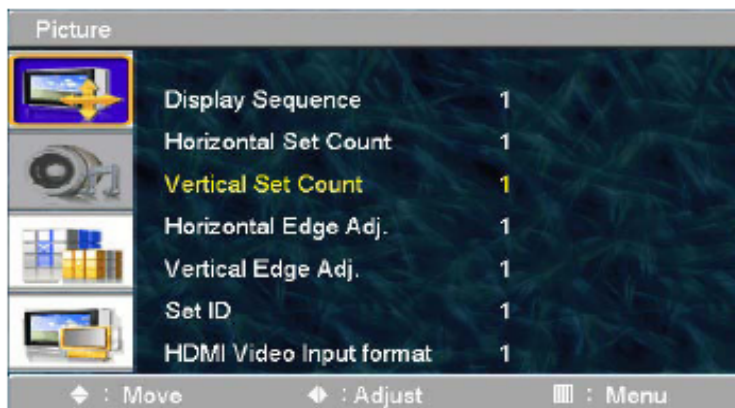
- Display Sequence : Set the panels to display the contents.(1~100)





1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **Horizontal Set Count**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

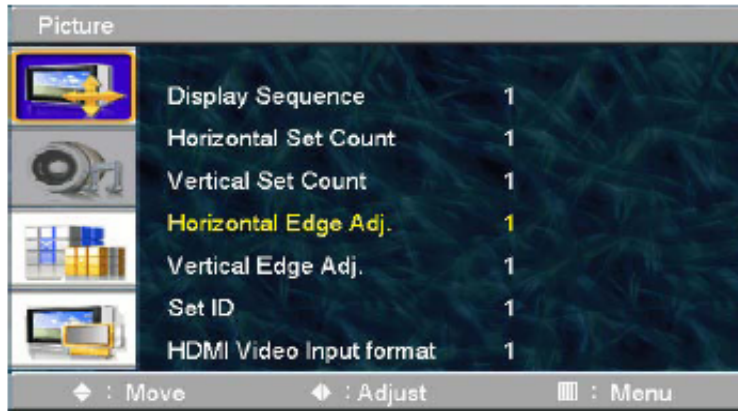
- H-Set Count (Horizontal Set Count) : Set the horizontal size of the Multivision (1~10)
E.g. If set as above, H-Set Count : 3



1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **Vertical Set Count**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

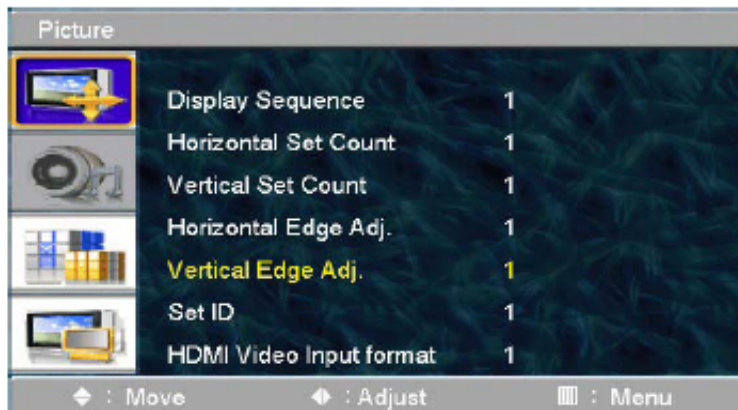
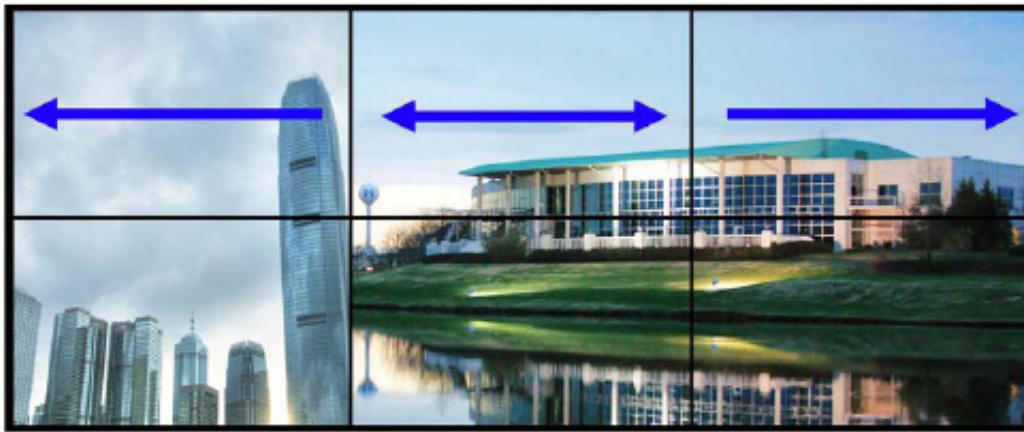
- V-Set Count (Vertical Set Count) : Set the vertical size of the Multivision (1~10)
E.g. If set as above, V-Set Count : 3





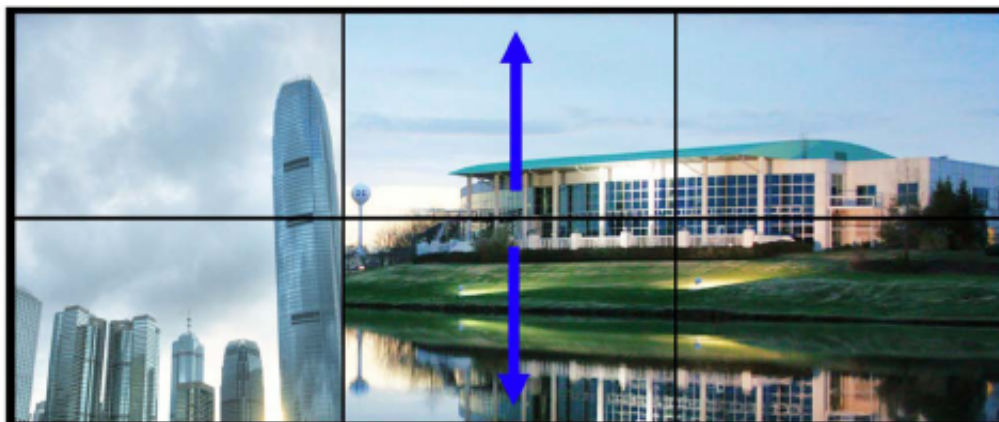
1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **Horizontal Edge Adj.**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

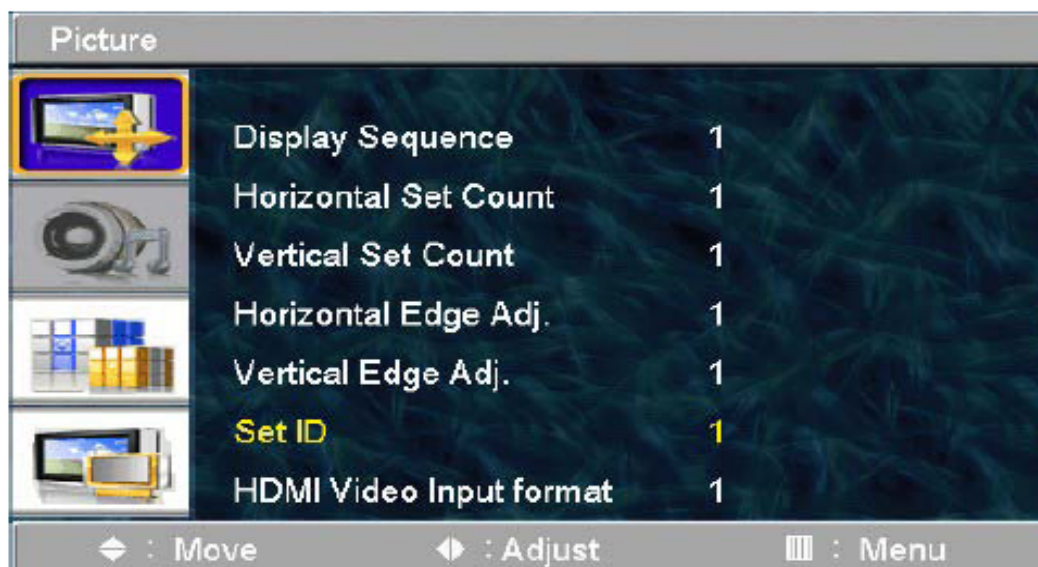
- H-Edge Adj (Horizontal Edge Adjust) : Set the horizontal gap of Multivision (0~200)



1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **Vertical Edge Adj.**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

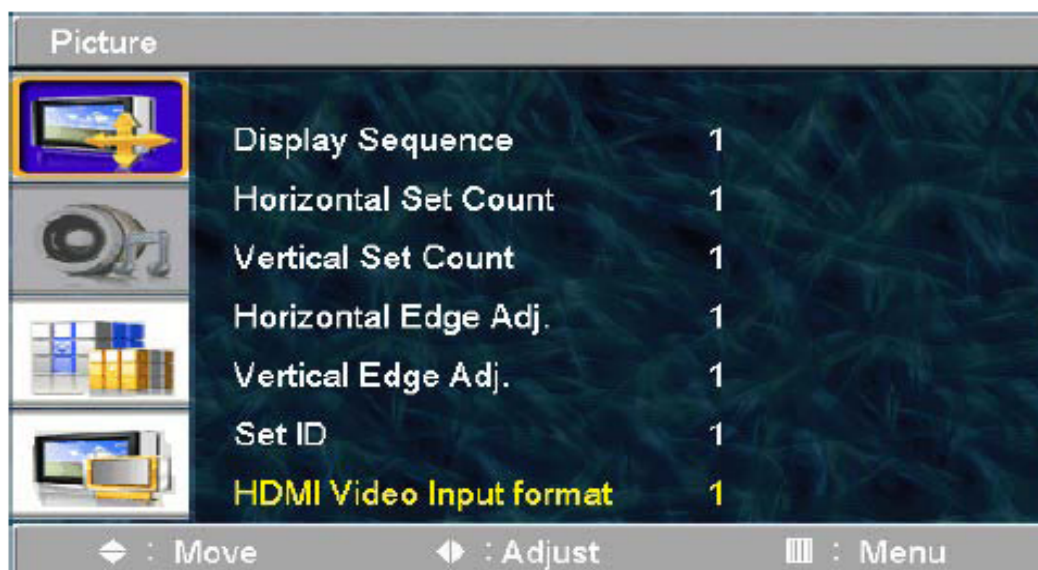
- V-Edge Adj (Vertical Edge Adjust) : Set the vertical gap of Multivision (0~200)





1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **Set ID**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

- Set ID Setting (Set ID Adjust) : Set the Set ID of Multi Vision (1~100)

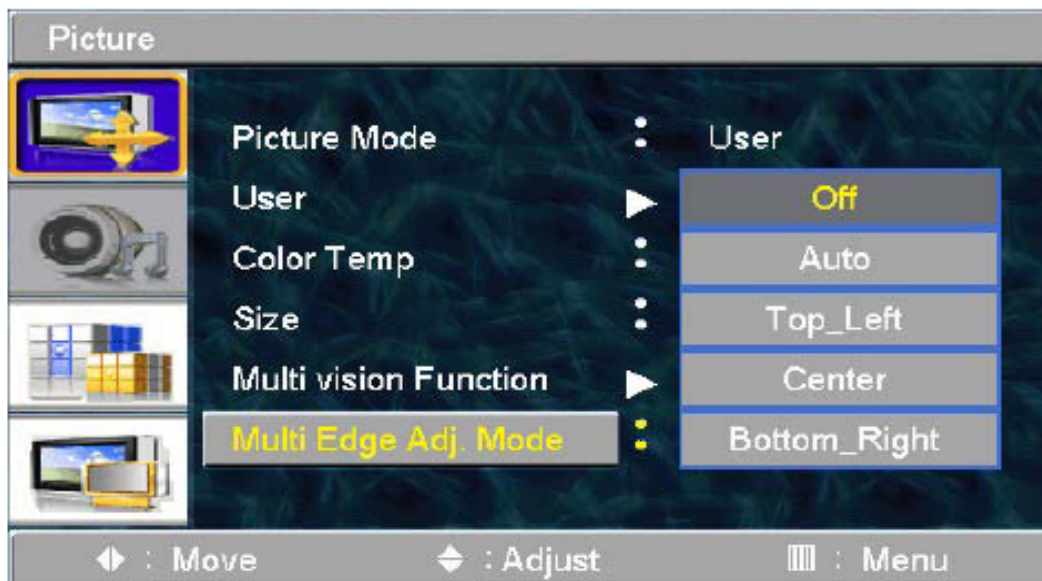


1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi vision Function**, then press the **ENTER** button.
4. Press the **▲** or **▼** button to select **HDMI Video Input format**, then press the **ENTER** button.
5. Press the **◀** or **▶** button until you reach the optimal setting.
6. Press the **EXIT** button to exit.

- HDMI Video Input format : Select video format of HDMI input data

- 0 : RGB444
- 1 : YPbPr444
- 2.: YPbPr422

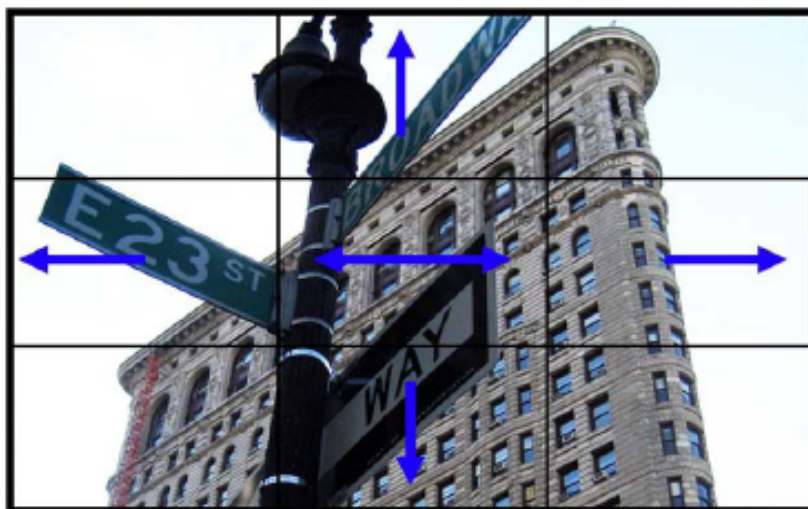
Selecting the Multi Edge Adj.Mode.



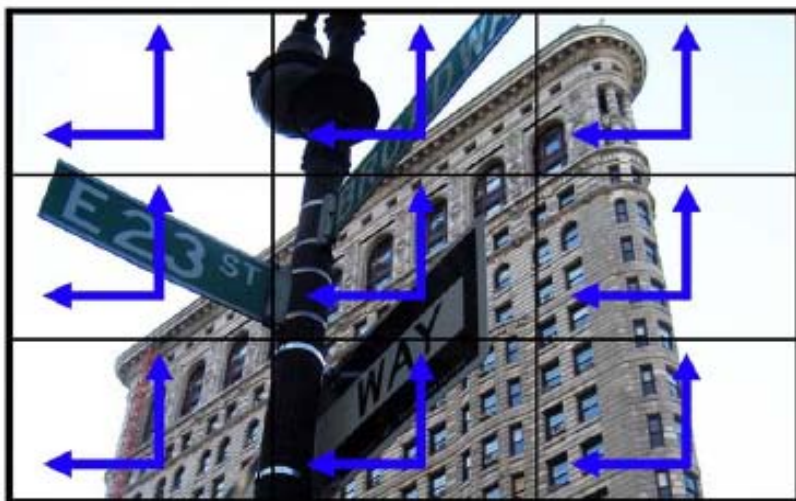
1. Press the **MENU** button to display the menu.
2. Press the **ENTER** button.
3. Press the **▲** or **▼** button to select **Multi Edge Adj.Mode**, then press the **ENTER** button.
4. Select the required option by pressing the **▲** or **▼** button, then press the **ENTER** button.
5. Press the **EXIT** button to exit.

※ Adjust Horizontal/ Vertical Edge Gap

- ◆ Off : This Adjust Horizontal/ Vertical Edge Gap Off
- ◆ Auto : This Adjust Horizontal/ Vertical Edge Gap Normal.



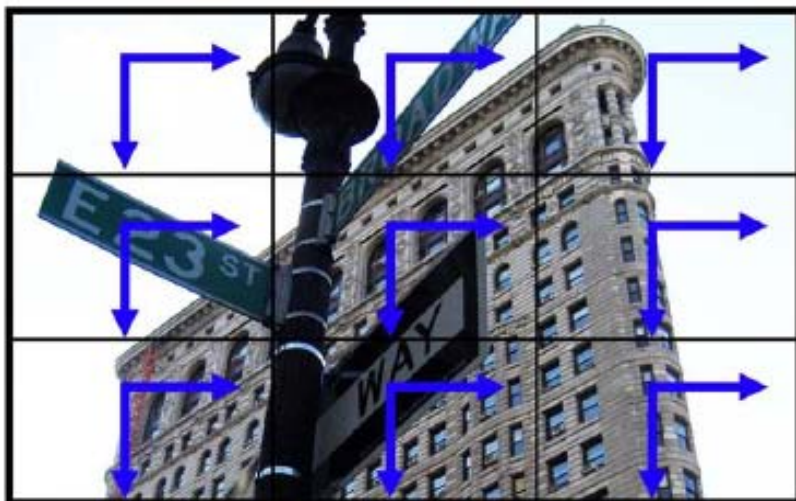
◆ Top Left : This Adjust Horizontal(Left) / Vertical(Top) Edge Gap.



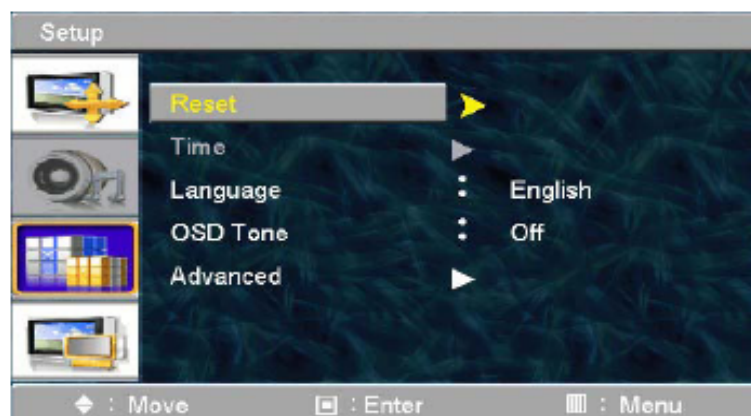
◆ Center : This Adjust Horizontal(Center) / Vertical(Center) Edge Gap.



◆ Bottom Right : This Adjust Horizontal(Right) / Vertical(Bottom) Edge Gap.



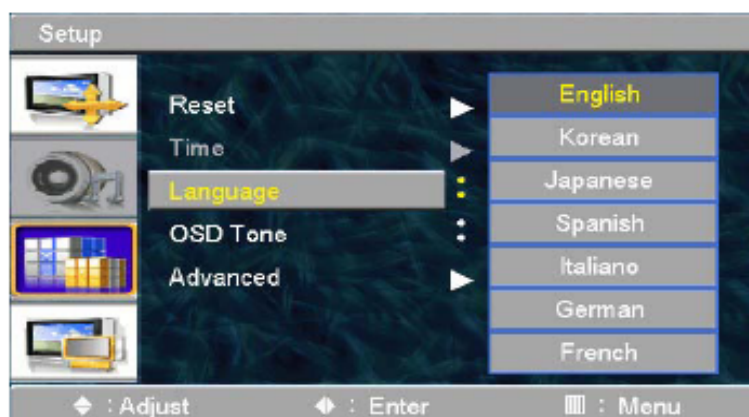
Reset.



1. Press the **MENU** button to display the menu.
2. Press the **▲** or **▼** button to select **Setup**, then press the **ENTER** button.
3. Select the required option by pressing the **▲** or **▼** button, then press the **ENTER** button.
4. When you are satisfied with your setting, press the **ENTER** button.

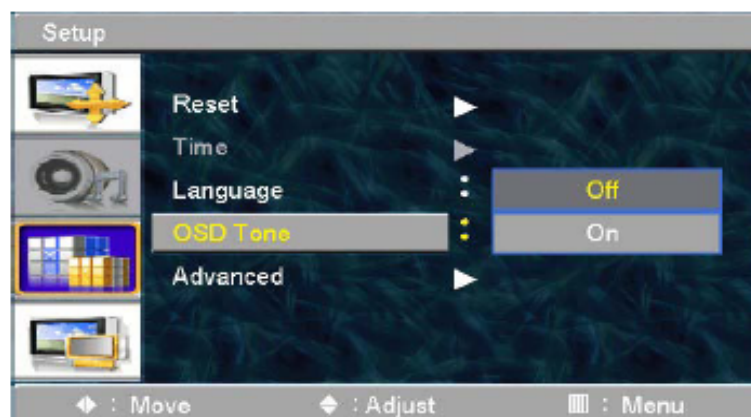
◆ **Reset :**
You can return to the factory defaults settings.

Language.



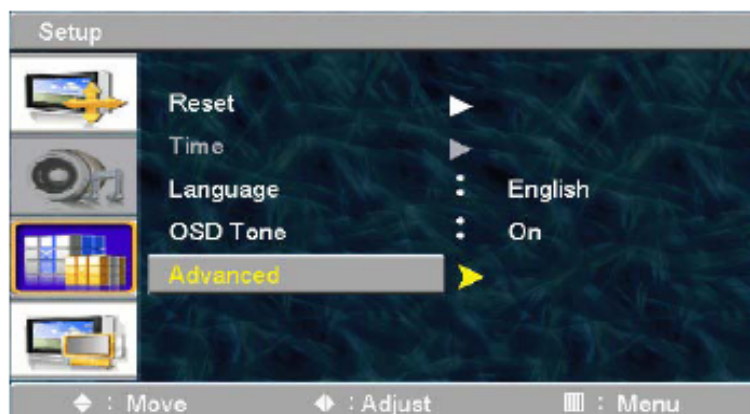
1. Press the **MENU** button to display the menu.
2. Press the **▲** or **▼** button to select **Setup**, then press the **ENTER** button.
3. Select the required option by pressing the **▲** or **▼** button, then press the **ENTER** button.
4. When you are satisfied with your setting, press the **ENTER** button.
5. Press the **EXIT** button to exit.

OSD Tone.



1. Press the **MENU** button to display the menu.
2. Press the **▲** or **▼** button to select **Setup**, then press the **ENTER** button.
3. Select the required option by pressing the **▲** or **▼** button, then press the **ENTER** button.
4. When you are satisfied with your setting, press the **ENTER** button.
5. Press the **EXIT** button to exit.

Advanced.



Heat control.



1. Press the **MENU** button to display the menu.
2. Press the **▲** or **▼** button to select **Setup→Heat Control** then press the **ENTER** button.
3. Select the required option by pressing the **▲** or **▼** button

-Fan Control :

Off/On/Auto : If you want always fan off then Off or always on then On or Auto control then Auto.

-Fan Active Temperature : Fan turn on point.

-Hysteresis : Fan turn on or off margin value.

-Temperature : Current temperature

4. Press the **EXIT** button to exit.

* Fan Functionality (Example)

- Fan Control Mode : Set with 'Auto' Mode.
- Fan Active Temperature : Set with 60 °C.
- Hysteresis: Set with 2 °C.

♦ Fan turn On Temperature (Fan Active Temperature + Hysteresis) : 62 °C

♦ Fan turn Off Temperature (Fan Active Temperature - Hysteresis) : 58 °C

* Temperature sensor are embedded to Models without Fan to check internal temperature of the set whilst in operation at the installation site.

Input	Max Timing	
DVI1	1920 X 1080	3SET
VGA	1920 X 1080	3SET
DVI2	1920 X 1080	3SET
RS-232	-	9SET

◆ SICP (Serial Interface Communication Protocol)

This document defines all the command and messages exchanged between the Master (a PC or the other controller) and the Slave (the displays).
It also describes the ways to send or read the commands or the messages.

1. Protocol definition

SICP stands for “Serial Interface Communication Protocol”.
The protocol is specifically designed to allow data communication in half duplex multi-point environments, but it can also be used for half duplex point-to-point RS-232C communication.

2. Communication characteristics

A half duplex communication is implemented starting from the concept of a master-slave structure, where the display is supposed to be the slave.
The first action is always taken by the master, which can be either a PC or any controlling device (acting as server) interfaced to the monitor. After sending a command or a request in the appropriate format the master receives from the slave an acknowledgement, which tells the transmitter whether the command is not valid (or not executable, anyway) or it is accepted. In case of a request, the requested information is sent back and it becomes the acknowledgement by itself.

3. How to connect a external equipment

Female Pin number	Male Pin number
2 <----->	2
3 <----->	3
5 <----->	5

4. Hardware Protocol

Baud rate : 9600 bps
Data bits : 8 bit
Parity bits : None
Stop bits : 1 bit
Handshake : None

◆ How to Install SICP

1. Introduction

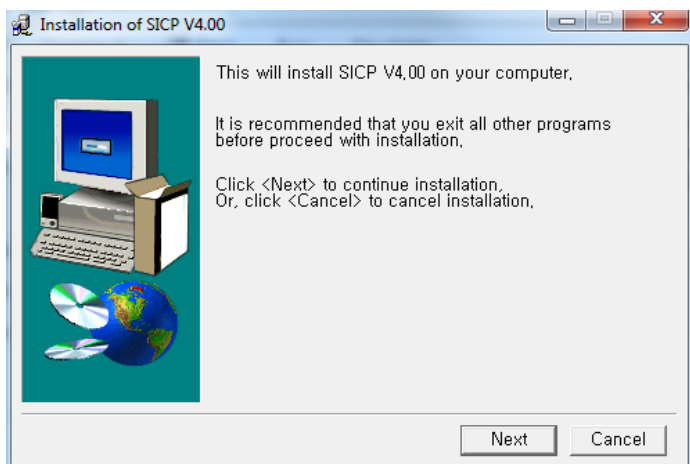
This manual booklet describes how to manage and utilize the product (Video Wall set) through remote control by RS232 protocol. This will introduce SICP V4.01 (Software that enables you to control the Video Wall) and various applications will be possible with this software. As per different way of customizing, the functions and specifications of each product may vary.

Notice: Please extract VBRunTimesR7.zip and install the program for VISTA, WIN7/8 before installing SICP.

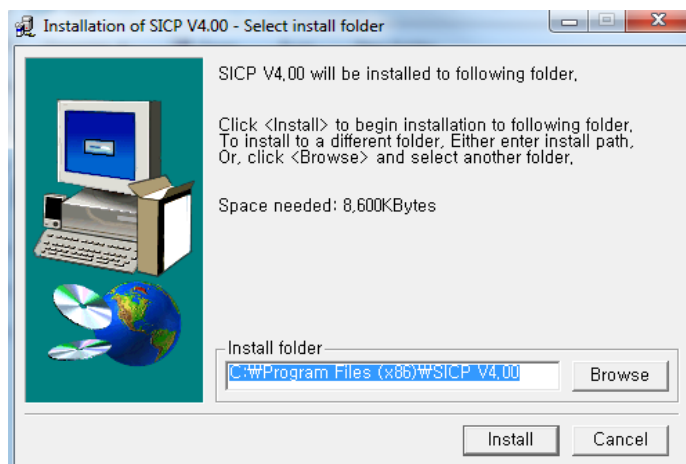
2. Installing SICP V4.01

Run the file named **"SICP 4.01_Set up.exe"** and follow the instruction below.

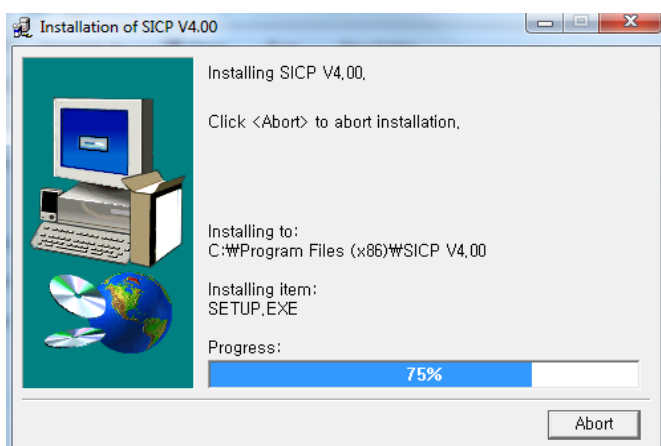
If you have SICP program installed previously, delete the previous one and re-install the new one.



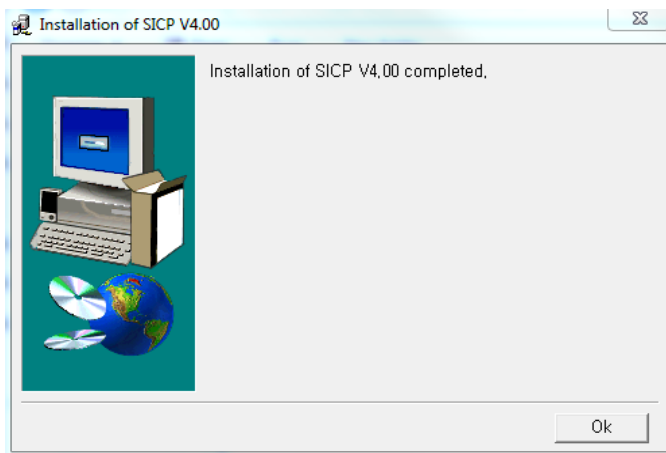
Press "Next"



Select the folder you wish to save the file in.
Press "Install" if you are ok with the designated folder.



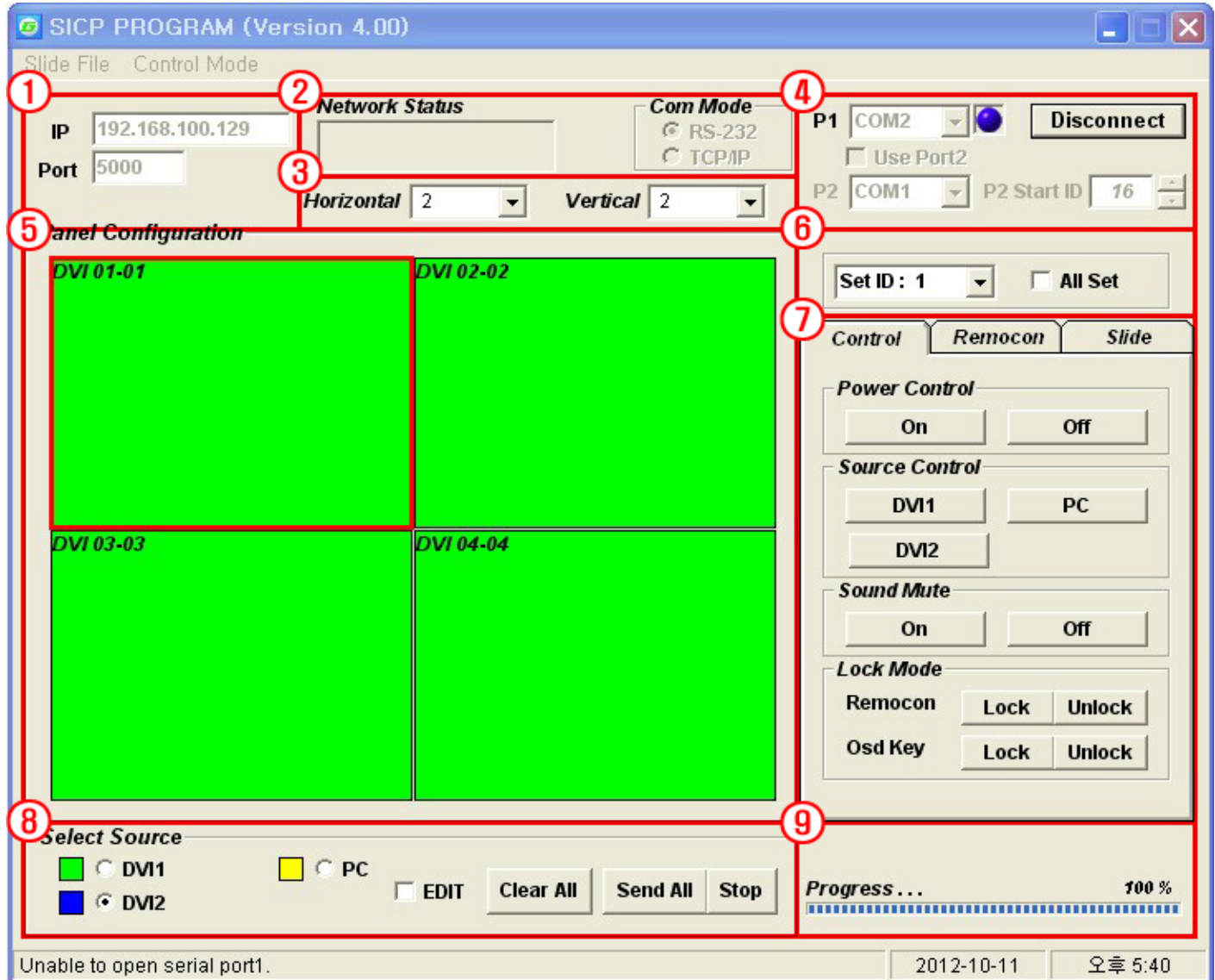
Wait until the installation is complete.



Once installation is complete, go to "Start" Menu -> Programs -> SICP V4.01 to run the program

3. Running SICP V4.01 and Structure

Go to "Start" Menu -> Programs -> SICP V4.01 to run the program.



1. Network IP Setting: Controls IP Setting.
2. Com Mode: Selects the COM Port Mode.
3. Horizontal & Vertical: Select Horizontal & Vertical count of sets in array.
4. Communication: Select the COM Port connected to the PC.
5. Panel Configuration: Indicates information such as display configuration, source, Set ID and display sequence number.
6. Set ID: Shows the Set ID selected for control.
7. Control Button: Set of control buttons/functions.
8. Edit tools: Set of edit tools.
9. Progress Bar: Shows the status of RS-232 communication.

4. Connect & Disconnect

- Users can connect RS-232 input and control from your PC using the RS232 Cable.
- Select the Port into which PC is connected (refer to ③ in the image on previous page) and click "connect" button.

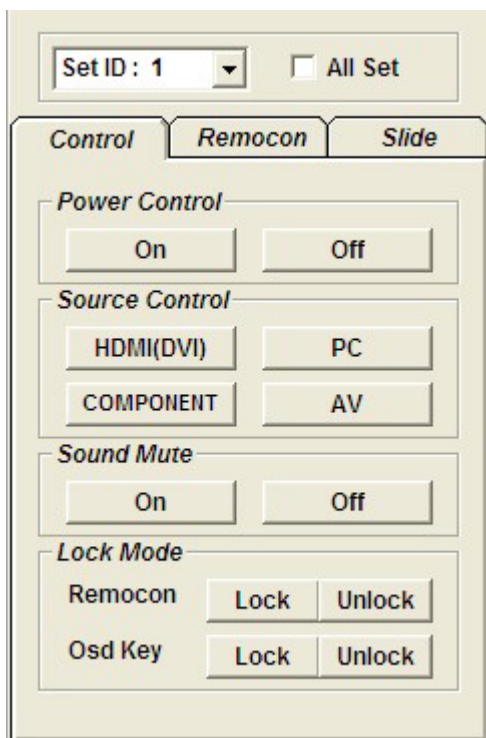
If connected properly, the indicator in box ④ will turn BLUE (from RED). If not connected properly, one of the following messages will appear:

- *Unable to open serial port: The port may not be available on your PC, or another program may be running under this port.
- *Cannot connect with Easy DID System: RS232 Cable may not be connected properly or Set ID may be incorrect. Re-check on Set ID.

5. Multi-vision Control

You can control each display separately. First, select the display you wish to control by selecting Set ID. You may click on it (Refer to box ④ in the image on the previous page) or select it from the drag-down menu (Refer to ⑤ in the image on the previous page). Users may conduct the following functions on the selected set:

1) Basic Control



- Select Control Tab

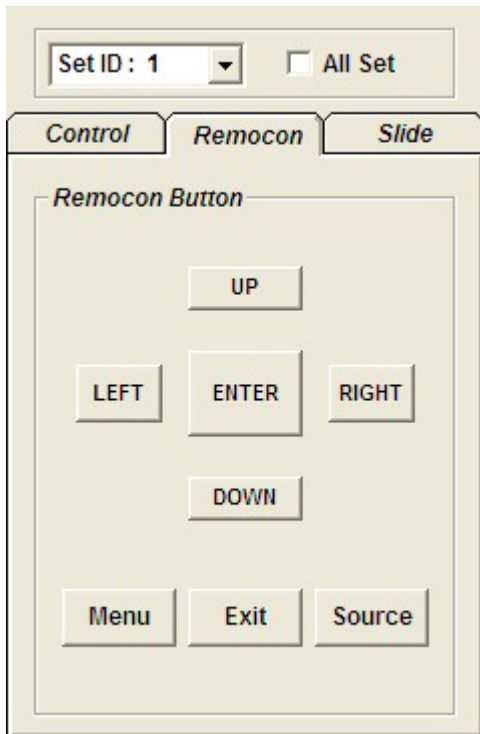
Power Control: Powers the Set On/Off

Source Control: Selects Source

Sound Mute: Turns Mute On/Off

Lock Mode: Locks or unlocks the IR/control key.

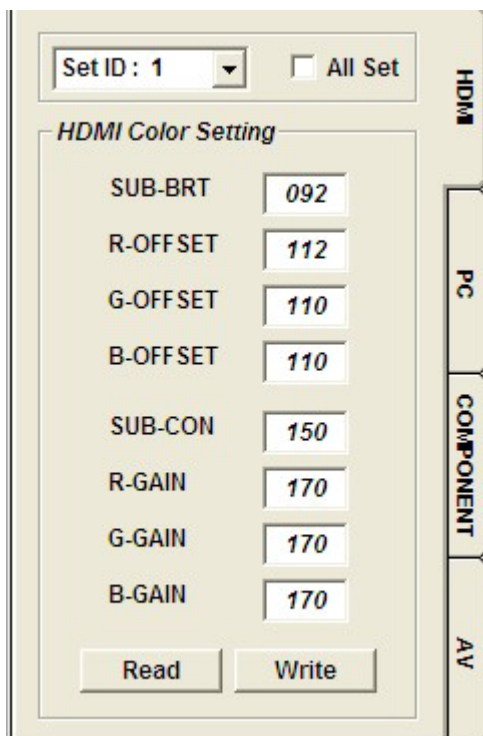
2) Virtual Remocon (Remote Control)



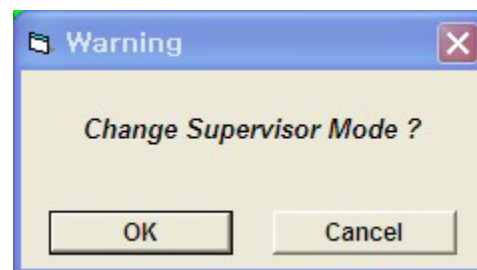
- Select Remocon Tab
- This virtual remote controller controls sets (displays) via RS-232.

Note: Functions in Slide Tab will be described in "6. Slide Function"

3) Color Setting



- Users may access the "Color Setting" mode only after entering Supervisor Mode. In order to enter Supervisor mode, go to "Control Mode" in the toolbar (top) and select "Setting Mode"
- Hot key: Ctrl+F2.



- Click "OK"
- Adjust color values (0~255). The color will be optimized during production & Quality Assurance. Adjusting the color is not recommended without prior consultation with GPO US.

4) Edge Setting

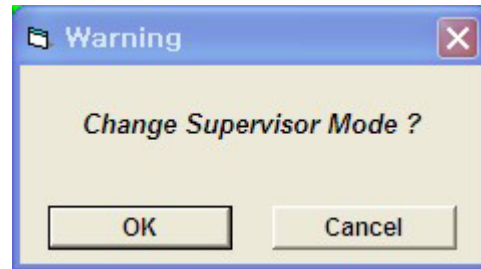
Set ID : 1 ☐ All Set

MultiVision Function

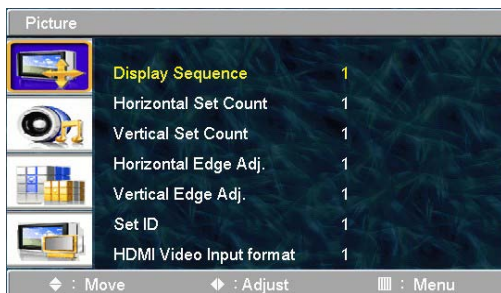
Sequence	1	SET
H-SetCount	1	SET
V-SetCount	1	SET
H-Edge Adj	30	SET
V-Edge Adj	40	SET
Input Video	0	SET

EDGE TEMP1 TEMP2

- Users can access "Edge Setting" only if after entering Supervisor Mode. In order to enter Supervisor mode, go to "Control Mode" in the tool bar (top) and select "Setting Mode"
- Hot key: Ctrl+F3.



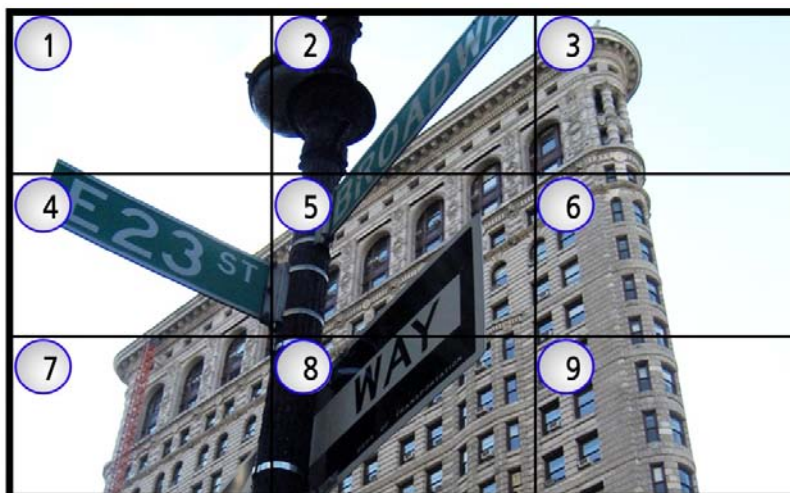
- Press "OK"
- Commands writable only (not readable).



<OSD Menu>

< Others >

- Display Sequence: position of display within context of the array (example below)



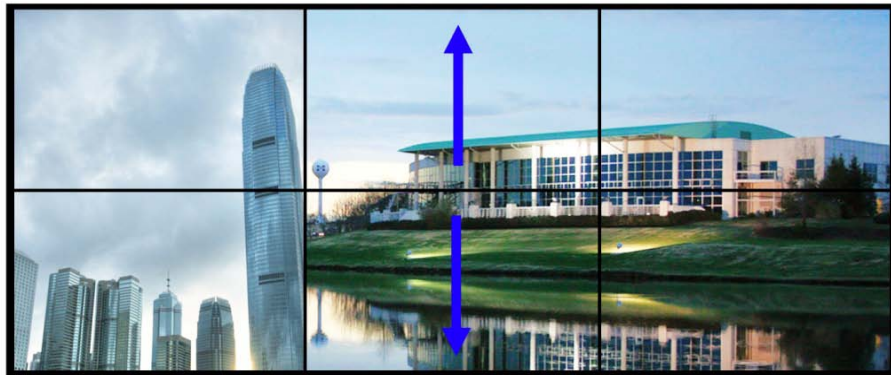
- H-Set Count (Horizontal Set Count): Number of displays in array horizontally (counting left-to-right)
E.g. Diagram of array on previous page shows H-Set Count of “3”

V-Set Count (Vertical Set Count):): Number of displays in array vertically (counting top-to-bottom)
E.g. Diagram of array on previous page shows V-Set Count of “3”

- H-Edge Adj (Horizontal Edge Adjust): Set the horizontal gap between displays in Video Wall (value range: 0~200)



- V-Edge Adj (Vertical Edge Adjust): Set the vertical gap of displays in Video Wall (0~200)



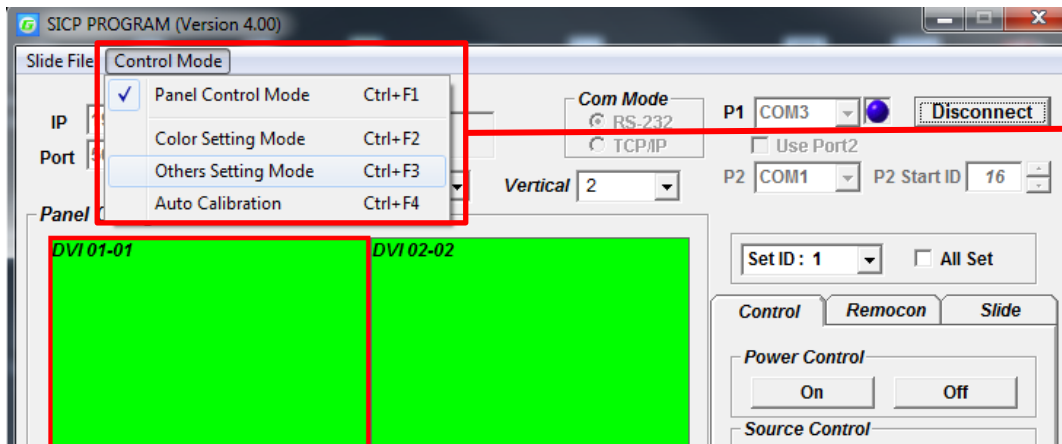
- HDMI Video Input format: Select video format of HDMI input data

0: RGB444

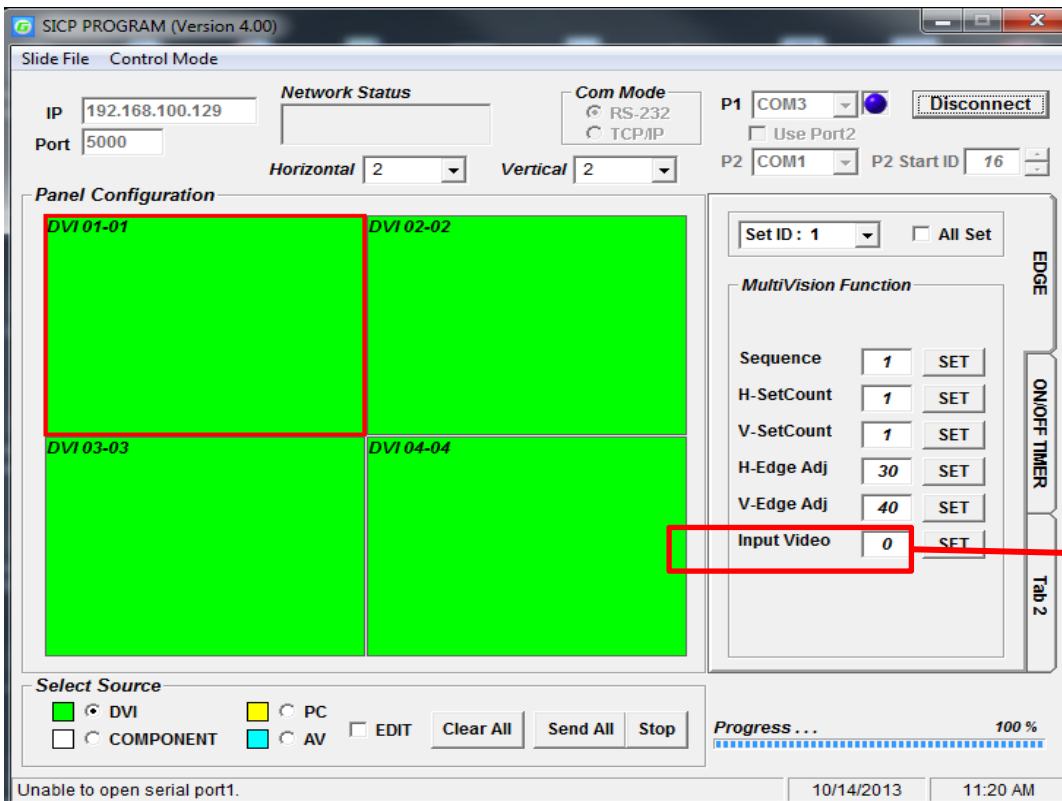
1: YPbPr444

2: YPbPr422

*HDMI Video Input format issues often manifest themselves in the form of a magenta/pink tint on display panels. If this issue arises, check the type of source being used. If, for example, a Blu-Ray player is being used, the HDMI Input Format on the displays must be set to "1" (default value is "0").



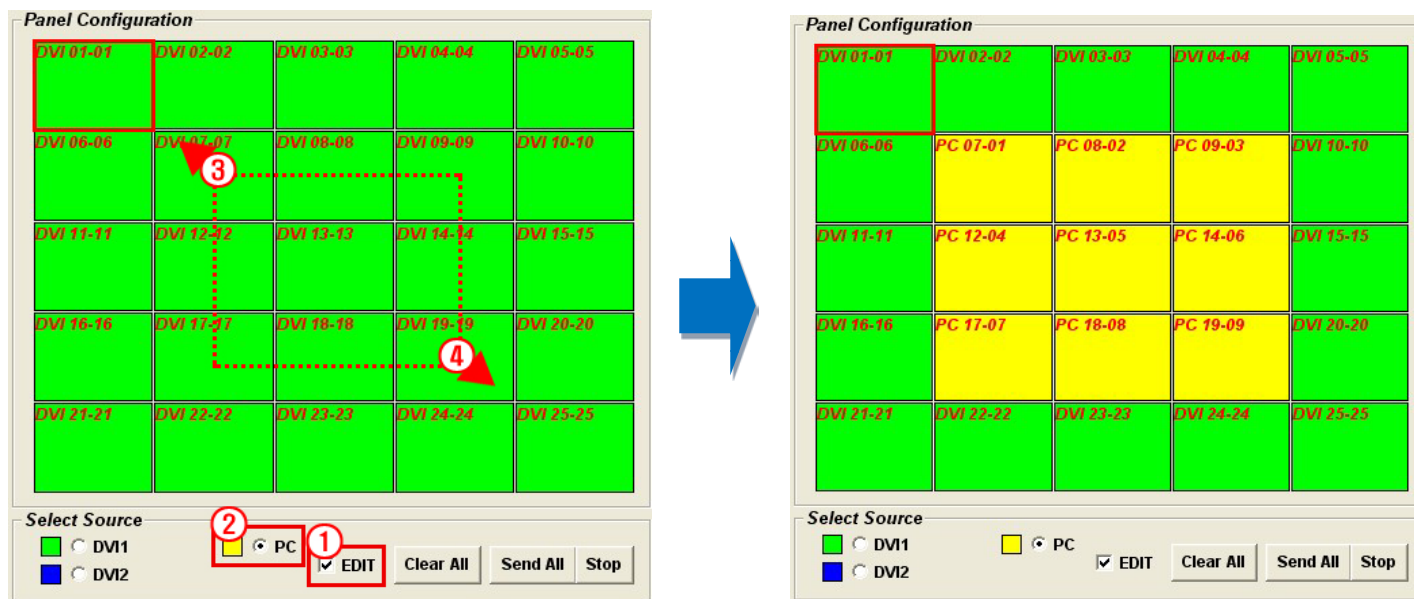
1. Click "Control Mode"
2. Select "Other setting "mode"



3. Change the input video format. (Ex. PC : 0, Blue-ray player: 1)

6. Slide Function

1) Edit



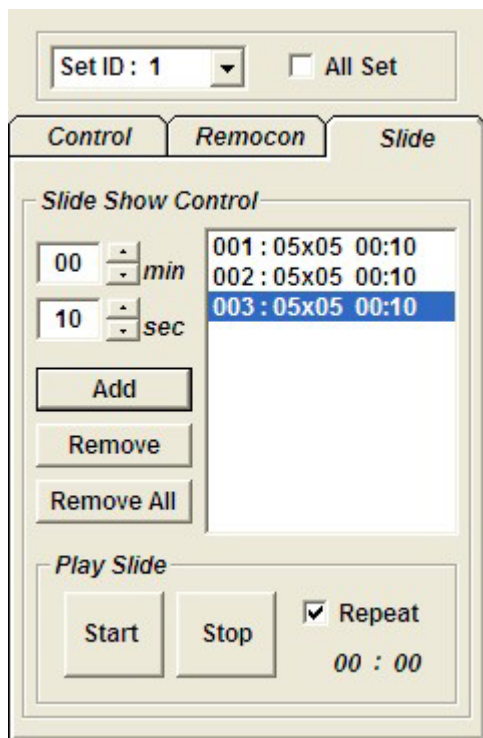
Example> When users wish to display a 5X5 background from DVI input and display 3X3 (in the center) from VGA input.

- Click on Edit box as described in ① on the image above.
- Select PC as described in ② on the image above.
- Select the area by clicking and dragging as described in ③ of the image above.
- The complete image will appear as the image on the top/right.

Send: Press “Send All” in order to test the setting you made so that you can decide if the adjustments are satisfactory.

Initialize: Select DVI in Edit tool and press “Set All” in order to initialize.

Add & Delete in Slide Schedule



Slide (Layout) scheduling: Users set intervals/schedules for each “slide”/layout separately.

Users cannot change the sequence of play after initial scheduling, so the schedule must be arranged in order prior to Start.

Add : Insert the edits (slides)

- Remove : Remove slide

- Remove All : Remove the entire slide schedule

2) Play

Click the “Start” icon (refer to the image above) to begin schedule and click “Stop” icon if you wish to stop the scheduled cycle of slides/layouts.

- Repeat: Check “Repeat” to loop schedule continuously.

3) File Management

Users may save layouts and replay the saved schedules. Users must save after completing scheduling.

- Save a file: Go to “Slide File” (top left of SICP program GUI) and press “File Save” in order to save the file in the folder you wish to select. Basically, the file format is *.sld.
- Open a file: Go to “Slide File” and press “File Open” in order to open the slide you wish to play.

5. Transmission Formats

This is the format that the computer will send to the display to execute commands .

The format for this command transmission is as follows:(total 13 byte)

ex) <STX>001PWRWOFF0<ETX> (Set ID : 1 , Power Off Send)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	W	O	F	F	0	0x0d
Hex	ASCII (capital letter)											Hex

- STX : Start of Text (0x0f)
- ID1 ~ ID3 : Set ID (001~100)
- CM1 ~ CM3 : Command (PWR, MIN, MUT,RML,KPL.....)
- R/W : Read/Write Only use "Read"(R) or "Write" (W) as set forth in this document
- DA1 ~ DA3 : Data (Values)
- IND : Index
- ETX : End of Text (0x0d)

6. OK Acknowledgement

The acknowledgement will be sent by the display to the computer to verify that the command has been successfully received and executed. This format for this acknowledgement is as follows:

ex) <STX>001PWR#OFF#<ETX> (Set ID : 1 , Power Off Acknowledgement)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	#	O	F	F	#	0x0d
Hex	ASCII (capital letter)											Hex

7. Error Acknowledgement

The Error Values will be sent by the display to the computer to verify that the command has been successfully received and executed.

This format for this Error Values is as follows:

ex) <STX>001PWRERROR<ETX> (Set ID : 1 , Power Off Error)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	E	R	R	O	R	0x0d
Hex	ASCII (capital letter)											Hex

8. How to choose display ID number

◆ Read Set ID Number

* Attention : Read Set ID Function must be only one connect Monitor (1 pc : 1 monitor)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : "FFF" (Set ID)

- DA1 ~ DA3 : "000" (Don't care)

Ex) <STX>FFFSIDR0000<ETX> (Read Set ID)

Acknowledge => <STX>001SID#001#<ETX> (Set ID : 1)

◆ Write Set ID Number

* Attention : Write Set ID Function must be only one connect Monitor (1 pc : 1 monitor)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : "FFF" (Set ID)

- DA1 ~ DA3 : "001" (Set ID Number)

Ex) <STX>FFFSIDR0010<ETX> (Write Set ID : 1)

Acknowledge => <STX>001SID#001#<ETX>

9. Command List

◆ Power On/Off (PWR)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				P	W	R	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Power On / "OFF" : Power Off

Ex) <STX>001PWRWOFF0<ETX> (Power Off)

Acknowledge => <STX>001PWR#OFF#<ETX>

Note: Do not substitute "R" for "W" in the "R/W" column in order to read display power state. Please see p. 29 of this document for the correct commands associated with this operation.

◆ Remote Control Lock On/Off (RML)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	M	L	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Lock On / "OFF" : Lock Off

Ex) <STX>001RMLW-ON0<ETX> (Lock On)

Acknowledge => <STX>001RML#-ON#<ETX>

◆ Keypad Control Lock On/Off (KPL)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				K	P	L	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Lock On / "OFF" : Lock Off

Ex) <STX>001KPLW-ON0<ETX> (Lock ON)

Acknowledge => <STX>001KPL#-ON#<ETX>

◆ Source Change (MIN)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				M	I	N	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "DVI" : DVI 1 / "DV2" : DVI 2 / "-PC" : VGA (D-SUB)

Ex) <STX>001MINWDVIO<ETX> (Source DVI)

Acknowledge => <STX>001MIN#DVI#<ETX>

◆ Virtual Remote Control (RMT)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	M	T	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "MEN" (Menu) "SOU" (Source) "LEF" (Left & Volume-)
"RIG" (Right & Volume+) "ENT" (Enter)
"-UP" (Up) "DOW" (Down) "EXI" (Exit)

Ex) <STX>001RMTWSOU0<ETX> (Remote Source Button)
Acknowledge => <STX>001RMT#SOU#<ETX>

◆ Horizontal Set Count (HSC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				H	S	C	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001HSCW0100<ETX> (H-Set Count 10)
Acknowledge => <STX>001HSC#010#<ETX>

◆ VGA Auto Adjust (AUT)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				A	U	T	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-PC"

Ex) <STX>001AUTW-PC0<ETX> (VGA Auto)
Acknowledge => <STX>001AUT#-PC#<ETX>

◆ Vertical Set Count (VSC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				V	S	C	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001VSCW0100<ETX> (V-Set Count 10)

Acknowledge => <STX>001VSC#010#<ETX>

◆ Display Sequence (SDS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				S	D	S	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "100"

Ex) <STX>001SDSW0010<ETX> (Display Sequence 1)

Acknowledge => <STX>001SDS#001#<ETX>

◆ Horizontal Edge Adjust (HEG)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				H	E	G	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001HEGW0300<ETX> (H-Edge Adjust 30)

Acknowledge => <STX>001HEG#030#<ETX>

◆ Vertical Edge Adjust (VEG)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				V	E	G	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ~ "200"
- Ex) <STX>001VEGW0400<ETX> (V-Edge Adjust 40)
- Acknowledge => <STX>001VEG#040#<ETX>

◆ HDMI Input format(IVF)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				I	V	F	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "R44" : RGB444
- "Y44" : YPbPr444
- "Y22" : YPbPr422
- Ex) <STX>001IVFWR440<ETX> (HDMI Input format RGB444)
- Acknowledge => <STX>001IVF#R44#<ETX>

◆ Color Adjust DVI (FCD)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				F	C	D						0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ~ "255" (Color Value)
- R/W : "W" (Write)
- "R" (Read)
- IND : "0" (Sub-Brightness)
- "1" (R-Offset)
- "2" (G-Offset)
- "3" (B-Offset)
- "4" (Sub-Contrast)
- "5" (R-Gain)
- "6" (G-Gain)
- "7" (B-Gain)
- Ex) <STX>001FCDW1004<ETX> (Write : DVI Sub-Contrast 100)
- Acknowledge => <STX>001FCD#1004<ETX>
- Ex) <STX>001FCDR0002<ETX> (Read : DVI G-Offset)
- Acknowledge => <STX>001FCD#1102<ETX> (G-Offset:110)

◆ Color Adjust VGA(D-SUB) (FCP)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	ETX
0x0f				F	C	P					0x0d
Hex	ASCII (capital letter)										Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ~ "255" (Color Value)
- R/W : "W" (Write)
"R" (Read)
- IND : "0" (Sub-Brightness)
"1" (R-Offset)
"2" (G-Offset)
"3" (B-Offset)
"4" (Sub-Contrast)
"5" (R-Gain)
"6" (G-Gain)
"7" (B-Gain)

Ex) <STX>001FCAW1004<ETX> (Write : VGA Sub-Contrast 100)

Acknowledge => <STX>001FCA#1004<ETX>

Ex) <STX>001FCAR0002<ETX> (Read : VGA G-Offset)

Acknowledge => <STX>001FCA#1102<ETX> (G-Offset : 110)

◆ Zoom IN/OUT(ZOM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	0	Z	O	M	W					0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("000")
- DA1 ~ DA2 : "11" ~ "99" (H- Set Count , V-Set Count)
Ex) 3x3 Multivision => 33
- DA3 : "I" or "O" ("I" Zoom IN, "O" Zoom OUT)
- R/W : "W" (Write)
- IND : "0" (DVI 1) "1" (PC) "4"(DVI 2)

Ex) <STX>000ZOMW22I0<ETX> (2x2, Zoom IN, DVI 1)

Ex) <STX>000ZOMW33O1<ETX> (3x3, Zoom OUT, PC)

◆ Power On/Off Status (PWS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				P	W	S	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "-ON" : Power On
"OFF" : Power Off

Ex) <STX>001PWSR0000<ETX> (Set ID: 1 Read Power Status)
Acknowledge => <STX>001PWR#OFF#<ETX>

Input/Output Port Description

Items		Specifications
Supported Signal Connection	VGA (Analog RGB)	H Frequency Range : 20 ~ 80 kHz
		V Frequency Range : 55 ~ 75 Hz
		Maximum resolution : 1920x1080 60Hz
		Maximum pixel rate : 162 MHz/110MHz
	DVI (Digital RGB)	H Frequency Range : 20 ~ 80 kHz
		V Frequency Range : 55 ~ 75 Hz
		Maximum resolution : 1920x1080 60Hz
		Maximum pixel rate : 162 MHz/110MHz
		HDCP support
Input Connection	DVI	2
	PC Analog	1
	COM port (RS232C)	1 / 9 Pin (Female)
Output Connection	DVI	2
	PC Analog	1
	COM port (RS232C)	1 / 9 Pin (Male)

Timing Modes

Display Mode	Horizontal Frequency(KHz)	Vertical Frequency(Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	43.269	85.008	36.000	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	53.674	85.061	56.250	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA, 1280 x 1024	79.976	75.025	135.000	+/+
1366 x 768	47.712	60.015	85.500	+/+
VESA,1920 x 1080	66.587	59.934	138.500	+/-

➤ Operating Temperature : 32 °F ~ 95 °F.

※ This product can be changed to improve performance without notification.

➤ Specifications are subject to change without prior notification